Correction to: Modern Digital Radio Communication Signals and Systems

Correction to:
S. -M. M. Yang, *Modern Digital Radio Communication Signals and Systems*,
https://doi.org/10.1007/978-3-319-71568-1

This book was inadvertently published without updating the following corrections:

Cover:
Spine- Michael Yang corrected to Yang

Chapter 2:

Page 40:

>0 corrected to >0

<0 corrected to <0

This is shown in the figure (LHS) corrected to This is shown in the figure below.

The updated online version of these book can be found at
https://doi.org/10.1007/978-3-319-71568-1_2
https://doi.org/10.1007/978-3-319-71568-1_3
https://doi.org/10.1007/978-3-319-71568-1_4
https://doi.org/10.1007/978-3-319-71568-1_5
https://doi.org/10.1007/978-3-319-71568-1_6
https://doi.org/10.1007/978-3-319-71568-1_7
https://doi.org/10.1007/978-3-319-71568-1_8
https://doi.org/10.1007/978-3-319-71568-1_9
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S. -M. M. Yang, *Modern Digital Radio Communication Signals and Systems*,
https://doi.org/10.1007/978-3-319-71568-1_10

$\Pr\{r(k)|\ A(k) = +1d|\}$ corrected to $\Pr\{r(k)|A(k) = +1d\}$
$\Pr\{r(k)|\ A(k) = +1d|\}$ corrected to $\Pr\{r(k)|A(k) = -1d\}$

Page 42:

For to two possible errors, see Fig. 2.13. corrected to Two possible errors; see Fig. 2.13.

Page 43:

$\ln \frac{\frac{1}{\sigma\sqrt{2\pi}}e^{-\frac{(r-1)^2}{2\sigma^2}}}{\frac{1}{\sigma\sqrt{2\pi}}e^{-\frac{(r+1)^2}{2\sigma^2}} = \ln \frac{e^{-\frac{(r-1)^2}{2\sigma^2}}}{e^{-\frac{(r+1)^2}{2\sigma^2}}}}$ corrected to $\ln \frac{\frac{1}{\sigma\sqrt{2\pi}}e^{-\frac{(r-1)^2}{2\sigma^2}}}{\frac{1}{\sigma\sqrt{2\pi}}e^{-\frac{(r+1)^2}{2\sigma^2}}} = \ln \frac{e^{-\frac{(r-1)^2}{2\sigma^2}}}{e^{-\frac{(r+1)^2}{2\sigma^2}}}$

>0 corrected to >0

Page 45:

This is illustrated by the figure on LHS. corrected to This is illustrated by the figure above.

Page 46:
(Table 2.1) reference has been removed

Page 48:
$\frac{d}{\sigma} = \sqrt{\sqrt{\frac{\frac{E_s}{T}}{\frac{N_o}{2}B}\ \frac{3}{M^2-1}} = \sqrt{\frac{3}{M^2-1}\ \left(2\frac{E_s}{N_o}\right)}}$ corrected to $\frac{d}{\sigma} = \sqrt{\frac{\frac{E_s}{T}}{\frac{N_o}{2}B}\ \frac{3}{M^2-1}} = \sqrt{\frac{3}{M^2-1}\ \left(2\frac{E_s}{N_o}\right)}$

for M-PAM (Fig. 2.19) has been corrected to for M-PAM (Fig. 2.19), insert (Fig. 2.19) as .. Note that the above expression of SER (Fig. 2.19) is the same as BPSK…….

Page 58:
$\frac{1}{\pi}\int_0^{\pi-\frac{\pi}{M}\exp\left(-\frac{\frac{E_s}{N_o}\ sin^2\frac{\pi}{M}}{sin^2\theta}\right)d\theta}$ corrected to $\frac{1}{\pi}\int_0^{\pi-\frac{\pi}{M}} \exp\left(-\frac{\frac{E_s}{N_o}\ sin^2\frac{\pi}{M}}{sin^2\theta}\right)d\theta$

Page 59:
as shown in the LHS figure is corrected to as shown in the figure above

Page 68:
Fig. 2.20, 2.21, 2.22, 2.23 reference has been removed

2^L>-1 has been corrected 2^L - 1

modulo-2π is corrected to modulo 2π

Page 84:
Fig. 2.51 reference has been corrected to Fig. 2-52

Page 85:
Fig. 2.52 has been removed

Page 91:
In Fig. 2.59

$$\theta(t) = 2\pi \times \left[\frac{h}{2} \times \sum_{n=-\infty}^{\infty} a_n q(t - nT)\right] + \theta_0$$

Is corrected to

In Fig. 2.59

$$\theta(t) = 2\pi\left[\frac{h}{2} \sum_{n=-\infty}^{\infty} a_n q(t - nT)\right] + \theta_0$$

Page 95:
Fig. 2.65 reference is corrected to Fig. 2.66

Page 102:

$$E\{x(t)x(t+\tau)\} = \sum\nolimits_{n=-\infty}^{n=+\infty} \sum\nolimits_{k=-\infty}^{k=+\infty} E\left\{a_n {a^n}_k\right\} h(t-nT)h(t+\tau-kT)$$

Is corrected to

$$E\{x(t)x(t+\tau)\} = \sum\nolimits_{n=-\infty}^{n=+\infty} \sum\nolimits_{k=-\infty}^{k=+\infty} E\left\{a_n a_k\right\} h(t-nT)h(t+\tau-kT).$$

Page 103:

References of table Table 1.1 in Sect 1.2 is corrected to Table 9.1 in Sect. 9.1.2

Page 111:
. . .symbol mapping table and a function of addition. . . has been corrected to symbol mapping table and a function of additional. . .

Page 112:

CPSKs is corrected to CPFSKs

Page 112:
pp. 143-145 has been removed from reference [2]

Chapter 3:

Page 117:

Footnote "[2]We assume $g_X(t)$ to be real. When it is complex the matched filter is in general $g_X^*(-t)$. In other words, time reversal and conjugation of $g_X(t)$ will be a matched filter. Unless otherwise stated, we consider only a real impulse response. When $h(t)$ is real, $h(-t) = h^*(-t)$." has been added

Page 118:

impulse had a pair as $g_X^*(-t) \leftrightarrow G_X{}^{*X}(f)$; its frequency is corrected to impulse had a pair as $g_X^*(-t) \leftrightarrow G_X{}^*(f)$; its frequency

Page 122:

so the transmission power to be unified; $Ps = 1.0$. Is corrected to so the transmission power to be unity; $Ps = 1.0$.

Page 125:

illustratedin the figure below (Fig. 3.9). Is corrected to can be graphically illustrated in Fig. 3.9.

$\frac{No}{2} = \int_{-\infty}^{\infty} |G_R(f)|^2 df$ is corrected to $\frac{No}{2} \int_{-\infty}^{\infty} |G_R(f)|^2 df$

Page 136:

This basic configuration in Fig. 3.13 can be adjusted to a situation is corrected to This basic configuration in Fig. 3.12 can be adjusted to a situation.

Page 137:

The configuration in Fig. 3.13 can be made into a pair of standard components is corrected to The configuration in Fig. 3.12 can be made into a pair of standard components

Page 138:

a shape parameter, k, as shown in the above figure (RHS); is corrected to a shape parameter, k, as shown in Fig. 3.14 (RHS);

Page 139:

This LPF design tolerance spec is shown in Fig. 3.16 (LHS) above. Is corrected to This LPF design tolerance spec is shown in Fig. 3.16 (LHS).

Page 149:

With the approximation, we obtain $r(n) \cong a(n)h_0 + a(n-1)\bar{h}_1 + w(n)$ is corrected to With the approximation, we obtain $r(n) \cong a(n)h_0 + a(n-1)h_1 + w(n)$

Chapter 4:
Page 214:
Mobile fading channel model has been added

Chapter 5
Page 228:
where $D^{(m+\varepsilon)}(pT) = \sum_{l=0}^{N-1} C_l(pT)\, e^{j\frac{2\pi \cdot l \cdot (m+\varepsilon)}{N}}$ is corrected to where $\hat{D}^{(m+\varepsilon)}(pT) = \sum_{l=0}^{N-1} C_l(pT)\, e^{j\frac{2\pi \cdot l \cdot (m+\varepsilon)}{N}}$.

Page 230:
OFDM symbol boundary discussed in 5.4 above is corrected to OFDM symbol boundary discussed in 5.1.4 above

Page 238:
it is natural to implement 'windowing' a filter is corrected to it is natural to implement a 'windowing' filter.

Page 239:
OFDM symbol boundary can be recovered by correlation discussed in 5.4. is corrected to OFDM symbol boundary can be recovered by correlation discussed in 5.1.4.

Page 276:
Reference of (Fig. 5.52) has been removed

Chapter 6
Page 280:
then if $\sum_i [y_i]$>$= 0$, +1 is decided otherwise corrected to then if $\sum_i [y_i] \geq 0$, +1 is decided otherwise

Page 281:
The performance of n=3 repetition code performance with SD and HD is corrected to The performance of n=3 repetition code with SD and HD

Page 298:
Again the event u_j is defined as c_0 and is mistaken as c_j; u_j: $c_0 \rightarrow c_j$ with $j \neq 0$. Is corrected to Again the event u_j is defined as c_0 is mistaken as c_j; u_j: $c_0 \rightarrow c_j$ with $j \neq 0$.

Page 299:
we define the event of $u_{\mathbf{j}}$ is defined as c_0 and is mistaken as c_j, is corrected to the event of $u_{\mathbf{j}}$ is defined as c_0 is mistaken as c_j,

Page 302:
With the integration region; R: $1+n_1+1+n_3$ <0 and is corrected to With the integration region; R: $1+n_1+1+n_3<0$ and

$1+n_1+1+n_3$ <0 and $1+n_1+1+n_2$ <0 and $1+n_2+1+n_3<0$, is corrected to $1+n_1+1+n_3<0$ and $1+n_1+1+n_2<0$ and $1+n_2+1+n_3<0$,

Page 305:
$\ldots+u_{k-1}X^{k--1}g(X)$ (6.25) is corrected to $\ldots+u_{k-1}X^{k-1}g(X)$

Page 314:
Reference of (Fig. 6.14) has been removed

Page 321:
Reference of (Fig. 6.15) has been removed

Decoding process in summary: is updated to Decoding process in summary (Fig. 6.15)

Page 330:
D_{free} is defined as $d_{\text{free}} \equiv \min$ is corrected to d_{free} is defined as $d_{\text{free}} \equiv \min$

Page 336:
As we discussed in Sect. 2.3, is corrected to As we discussed in Sect. 6.2.3

This was discussed in Sect. 3.1.2 using a transfer function. Is corrected to This was discussed in Sect. 6.3.1.2 using a transfer function.

Page 338:
and then use CM decoding discussed in Sect. 2.3.1. Is corrected to and then use CM decoding discussed in Sect. 6.2.3.1.

Page 352:
In particular we look at Fig. 6.35 is corrected to In particular we look at Fig. 6.1
Reference of (Table. 6.16) has been removed

{10, 10, 10, 10, 11, 01, 01, 11, 00} and red bits in error. Is corrected to {10, 10, 10, 10, 11, 01, 01, 11, 00} and red bits in error (see Tables 6.16, 6.17 and 6.18)

Page 357:
Reference of (Table. 6.18). has been removed
Reference of (Table. 6.19). has been removed

Page 371:
Sub section references (4.3.1, 4.3.2, and 4.3.3), has been corrected to (6.4.3.1, 6.4.3.2, and 6.4.3.3),

Page 381:
Theorem 6.1 in Subsection 4.4.2 later is corrected to *Theorem* 6.1 in Subsection 6.4.5.2 later

Page 387:
connection. Code side = (n, k) = (1944, 972) is corrected to connection. Code size = (n, k) = (1944, 972)

Page 390:
Reference of Sect. 3.3 is corrected to Sect. 6.3.3

Page 395:
Sub section references 3.3.4 has been corrected to 6.3.3.4

$p_0 = 1/\left(1 + \mathrm{e}^{-2r/\sigma^2}\right)\ p_1 = 1/\left(1 + \mathrm{e}^{+2r/\sigma^2}\right)\ \frac{1}{\sigma} = \sqrt{\frac{2Es}{No}}$ is corrected to $p_0 = 1/\left(1 + \mathrm{e}^{-2r/\sigma^2}\right),\ p_1 = 1/\left(1 + \mathrm{e}^{+2r/\sigma^2}\right),\ \frac{1}{\sigma} = \sqrt{\frac{2Es}{No}}$

Page 396:
Reference of Fig. 6.58 has been removed

Page 398:
Reference of Sect. 5.4 is corrected to Sect. 6.5.4

Page 400:
Reference of Sect. 5.4 is corrected to Sect. 6.5.4

+ 0.5 (if $|x-y|1.5$) is corrected to + 0.5 (if $|x-y|\leq 1.5$)

Page 438:
Section 6.6.3 and 6.6.9 is corrected to Section 6.6.3 and 6.6.5

Chapter 7:

Page 449:

Reference of Sect. 1.4 is corrected to Sect. 7.1.4.3

Page 450:

IEEE std 802.11^{TM} is corrected to IEEE std 802.11^{TM} – 2012

Page 464:

Reference Sects. 1.2.1, 1.2.2, and 1.2.3. has been corrected sections 7.1.2.1 to 7.1.2.3.

Chapter 8:

Page 531:

E →D →C →B is corrected to $\underline{E} \rightarrow \underline{D} \rightarrow \underline{C} \rightarrow \underline{B}$

Page 533:

and cleaning channel occupancy is corrected to and clean channel occupancy

Page 534:

as in Fig. 8.2 and in Fig. 8.5. In particular is changed to as in Fig. 8.2 and in Fig. 8.4. In particular,

Page 534 and 536:

Reference of Fig. 8.4 has been corrected to Fig. 8.5

Page 545:

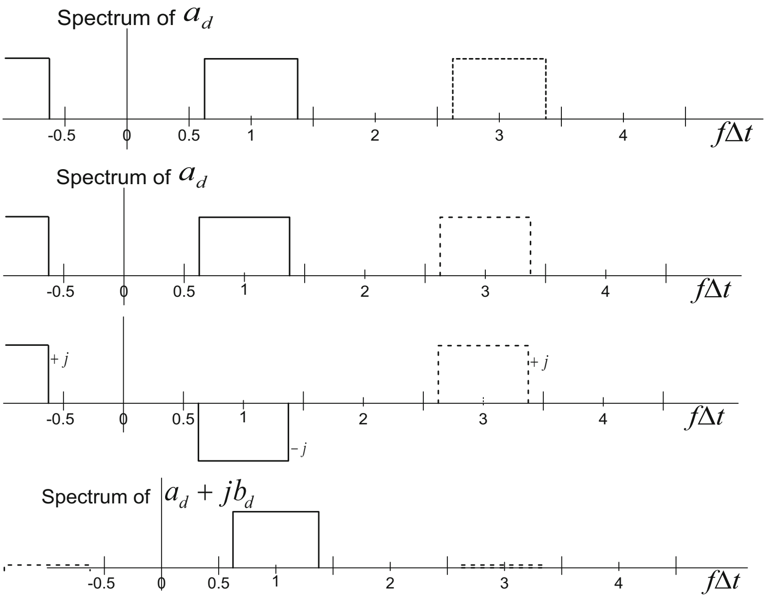
Reference of Fig. 8.3 has been corrected to Fig. 8.2

Page 546:

Figure 8.6 is updated as Fig. 8.6

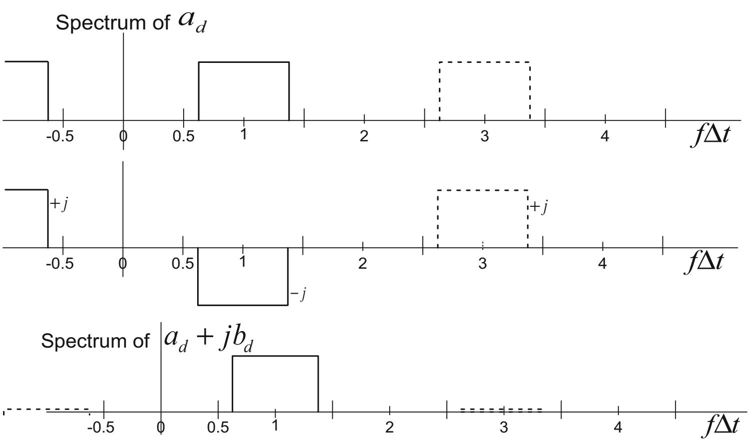
Page 548:

b) Digital IF quadrature modulation and upper sideband selection



is corrected to

b) Digital IF quadrature modulation and upper sideband selection



Page 559:
$y(0)$, $y(3)$, $y(4)$, $y(5)$. Is corrected to $y(0)$, $y(1)$, $y(2)$, $y(3)$.

Reference of Fig. 8.36 has been removed

Page 566:
Reference of Fig. 8.19 and 8.20 is corrected to Fig. 8.17

Page 572:
even if assume digital IF is perfect. Is corrected to even if we assume digital IF is perfect.

Page 591:
Reference of Fig. 8.66 has been removed

The figure on the left is a set of frequency is updated to Fig. 8.66 is a set of frequency

Page 594:
clipping as shown on the left figure is corrected to clipping as shown on the above figure

Page 607:
Reference of Fig. 8.33 has been removed

Chapter 9:
Page 620:
Use the identity of . . .. . .
$\int_{-\frac{1}{2T}}$ and $\int_{-\frac{1}{2T}}$ corrected to

Use the identity of . . .. . .
$\int_{-\frac{1}{2T}}^{+\frac{1}{2T}} e^{+j\pi fT+j2\pi ft} df$ and $\int_{-\frac{1}{2T}}^{+\frac{1}{2T}} e^{-j\pi fT+j2\pi ft} df$

Page 621 and 622:
$B << f_c$ is corrected to $B \ll f_c$

Page 624:
If it is not clear, Sect. 9.3 updated to If it is not clear, Sect. 9.4

Page 625:
$\sigma^2 = ¼\left(d^2 + d^2\right)4 = 2d^2$ for QPSK. $\sigma^2 = \frac{1}{8}\,(d^2)\;8 = d^2$

updated to

$\sigma^2 = ¼\;\left(d^2 + d^2\right)4 = 2d^2$for QPSK.
$\sigma^2 = \frac{1}{8}\,(d^2)\;8 = d^2$ for 8-PSK

Page 629:
$H(ej2\pi f)$ corrected to $H(e^{j2\pi f})$