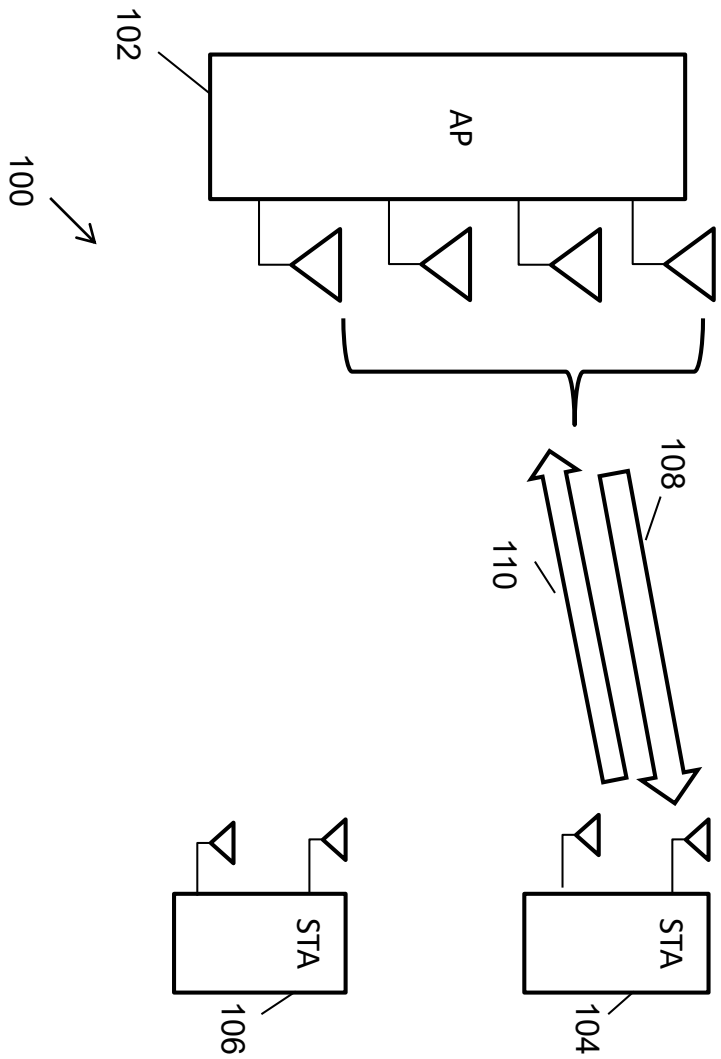


Figure 1

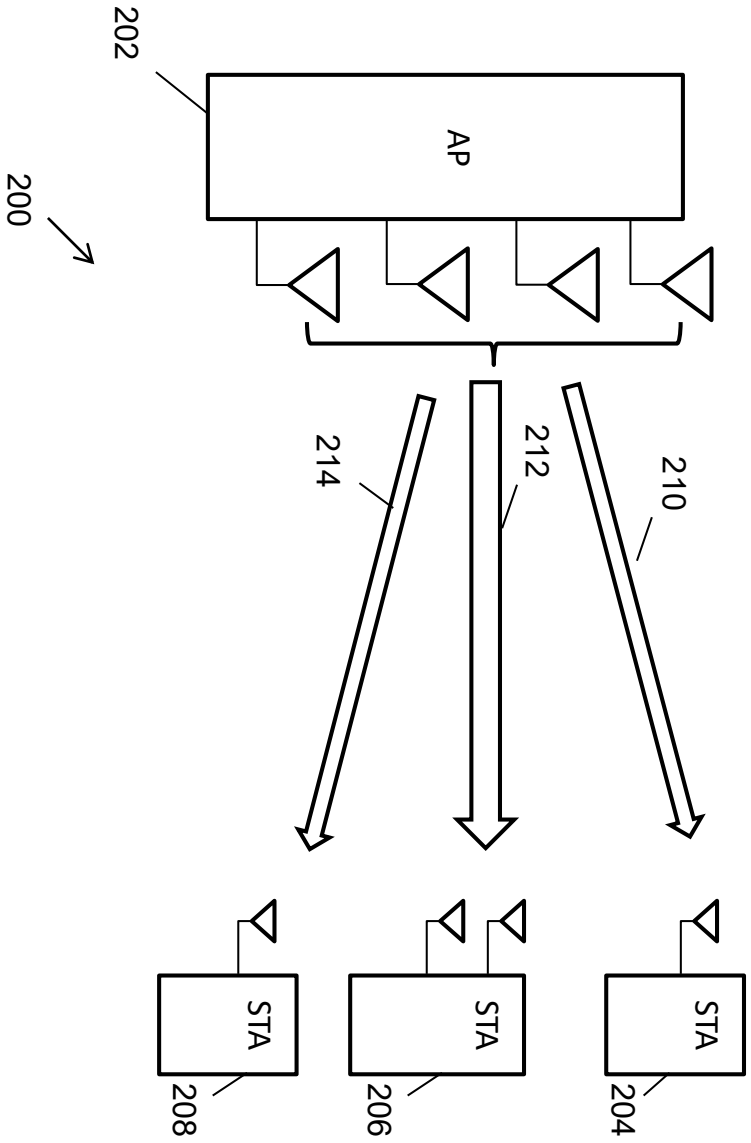


Figure 2

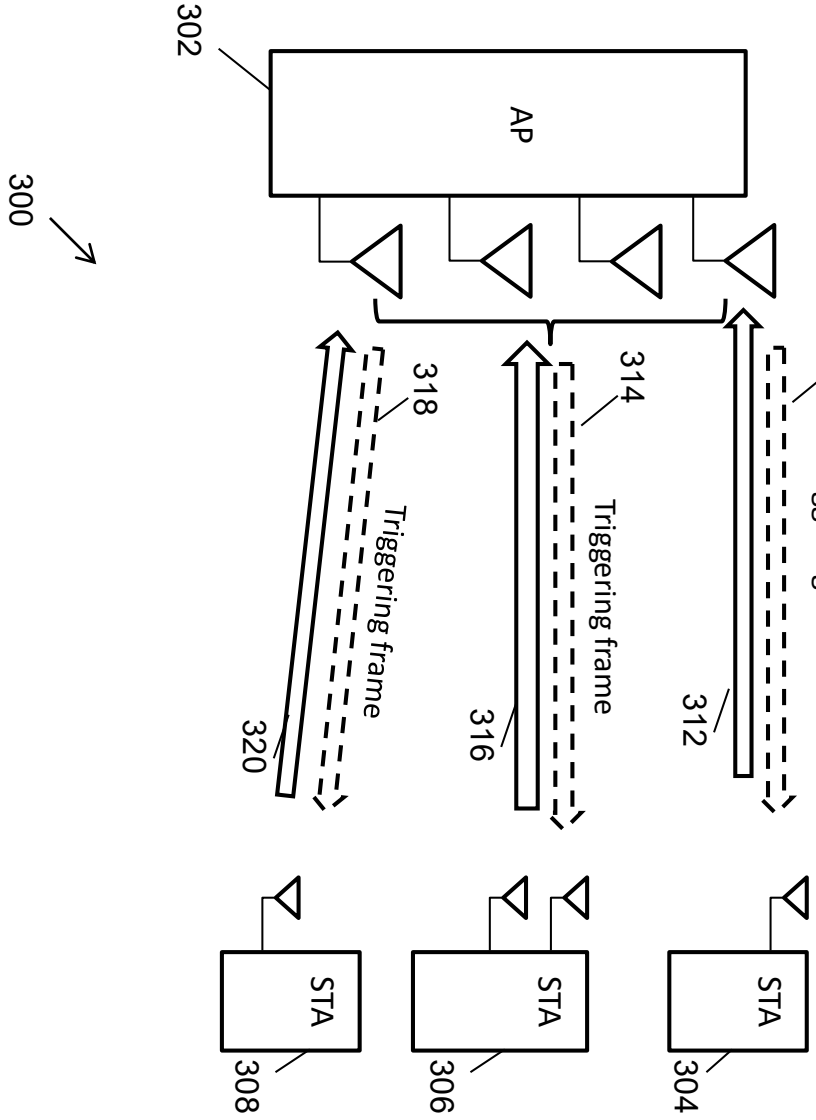

300
302
AP
310
Triggering frame
312
314
Triggering frame
316
318
Triggering frame
320
STA
304
STA
306
STA
308

Figure 3

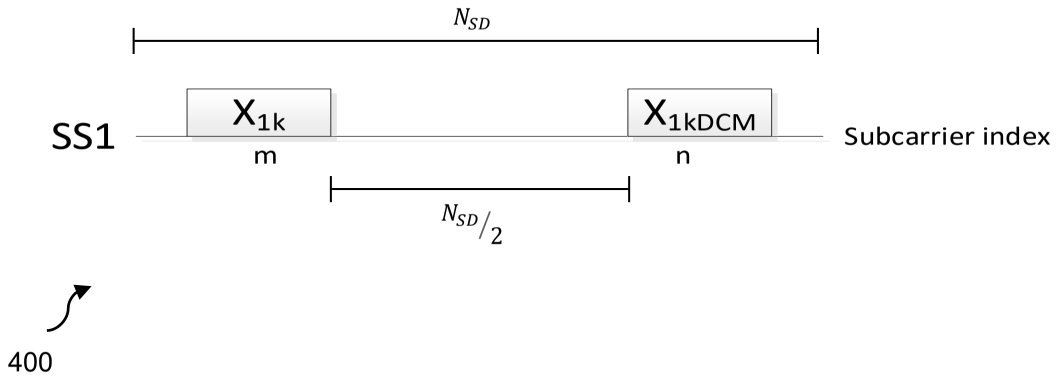


Figure 4

500
Single Spatial Stream
Pre-FEC PHY Padding
Scrambler
LDPC Encoder
Post-FEC PHY Padding
Stream Parser (Nss = 1)
Constellation Mapper
(BPSK + DCM)
LDPC tone mapper
Spatial Mapper
Ntx Transmit Chains
IDFT
IDFT
IDFT
Insert GI and Window
Insert GI and Window
Insert GI and Window
Analog and RF
Analog and RF
Analog and RF

Figure 5

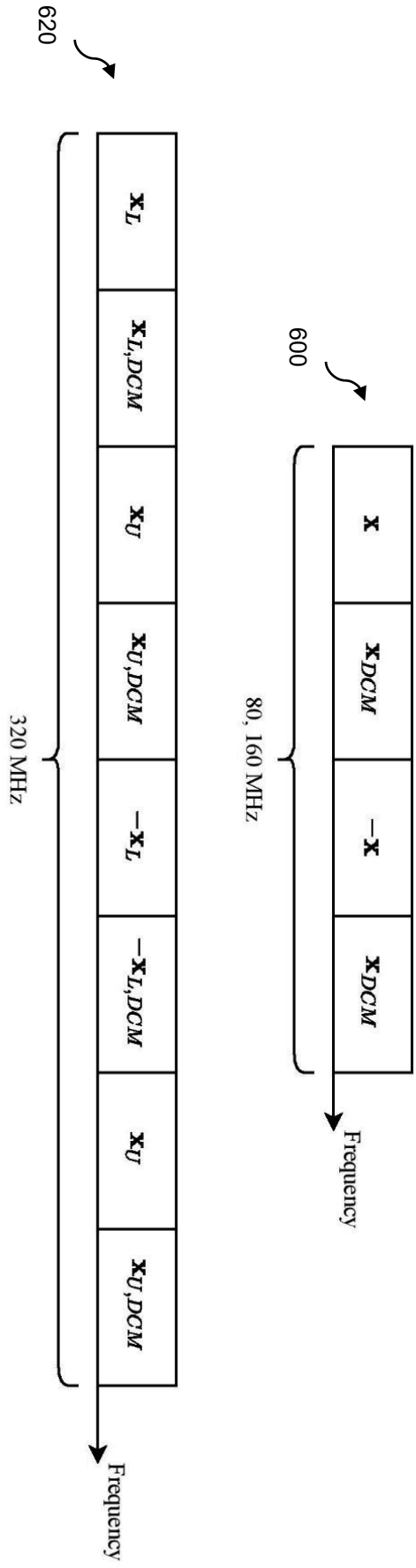

620
$\mathbf{x}_L$
$\mathbf{x}_{L,DCM}$
$\mathbf{x}_U$
$\mathbf{x}_{U,DCM}$
$-\mathbf{x}_L$
$-\mathbf{x}_{L,DCM}$
$\mathbf{x}_U$
$\mathbf{x}_{U,DCM}$
320 MHz
Frequency
600
$\mathbf{x}$
$\mathbf{x}_{DCM}$
$-\mathbf{x}$
$\mathbf{x}_{DCM}$
80, 160 MHz
Frequency

Figure 6

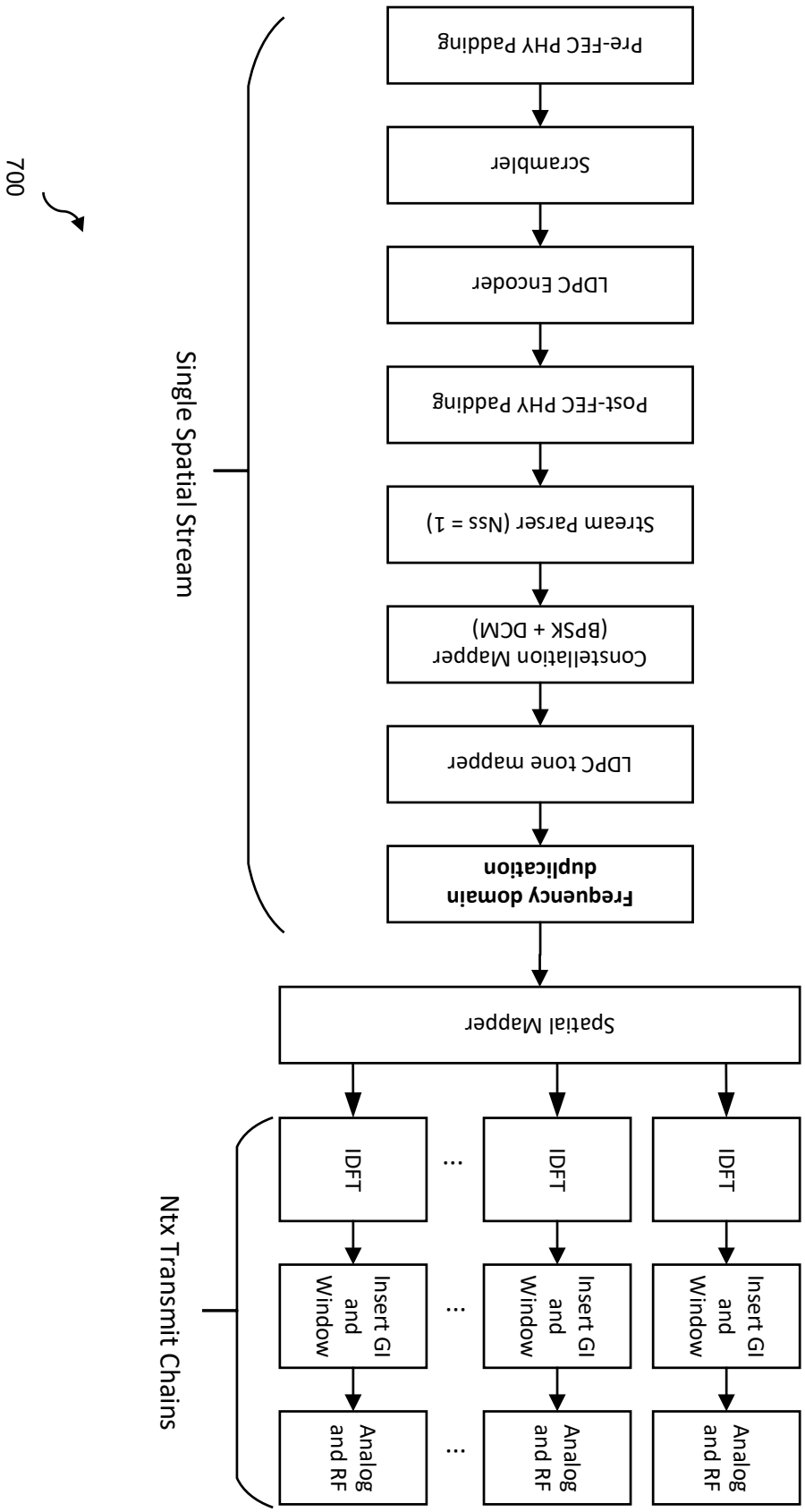

700
Single Spatial Stream
Pre-FEC PHY Padding
Scrambler
LDPC Encoder
Post-FEC PHY Padding
Stream Parser (Nss = 1)
Constellation Mapper
(BPSK + DCM)
LDPC tone mapper
Frequency domain
duplication
Spatial Mapper
Ntx Transmit Chains
IDFT
Insert GI
and
Window
Analog
and RF
...

Figure 7

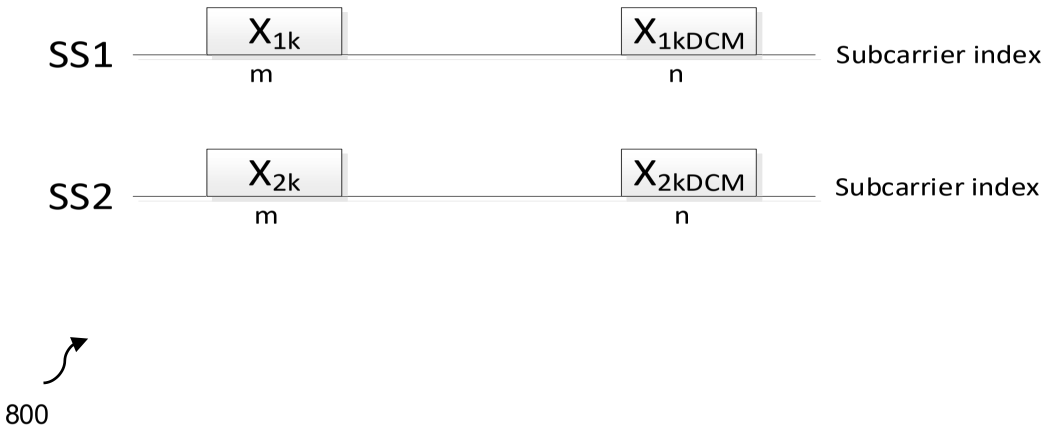

SS1
X_{1k}
m
X_{1kDCM}
n
Subcarrier index
SS2
X_{2k}
m
X_{2kDCM}
n
Subcarrier index
800

Figure 8

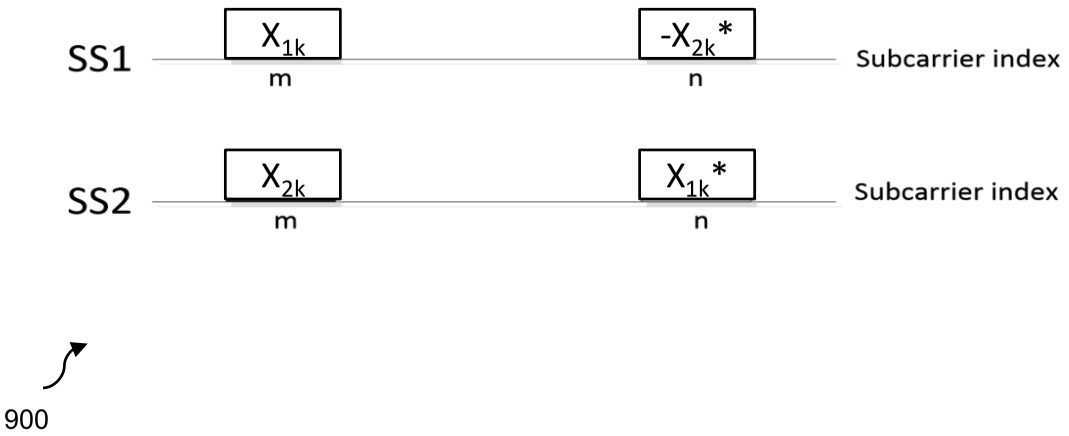

SS1
X_{1k}
m
$-X_{2k}^*$
n
Subcarrier index
SS2
X_{2k}
m
X_{1k}^*
n
Subcarrier index
900

Figure 9

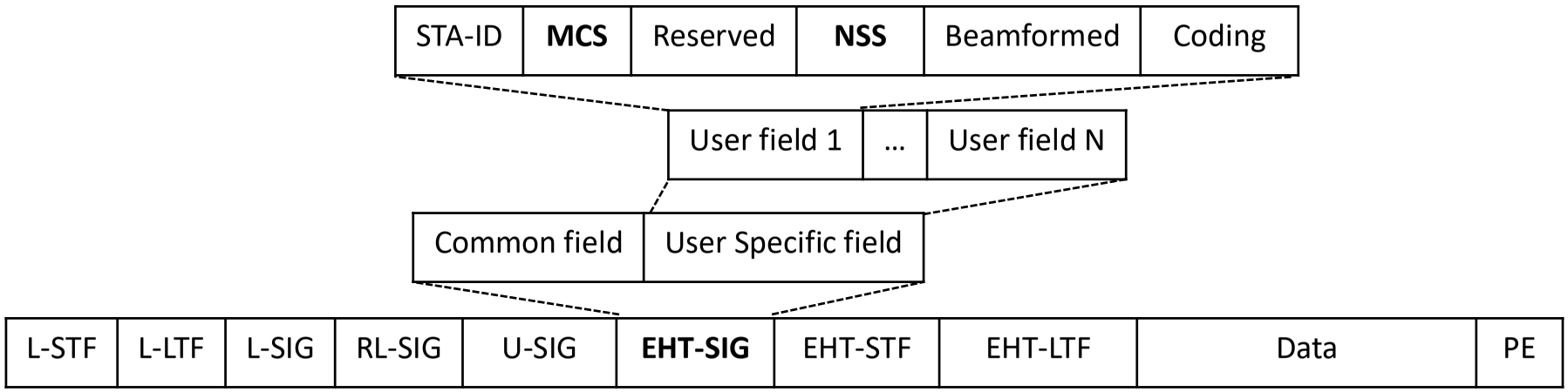

STA-ID
MCS
Reserved
NSS
Beamformed
Coding
User field 1
...
User field N
Common field
User Specific field
L-STF
L-LTF
L-SIG
RL-SIG
U-SIG
EHT-SIG
EHT-STF
EHT-LTF
Data
PE
1000

Figure 10

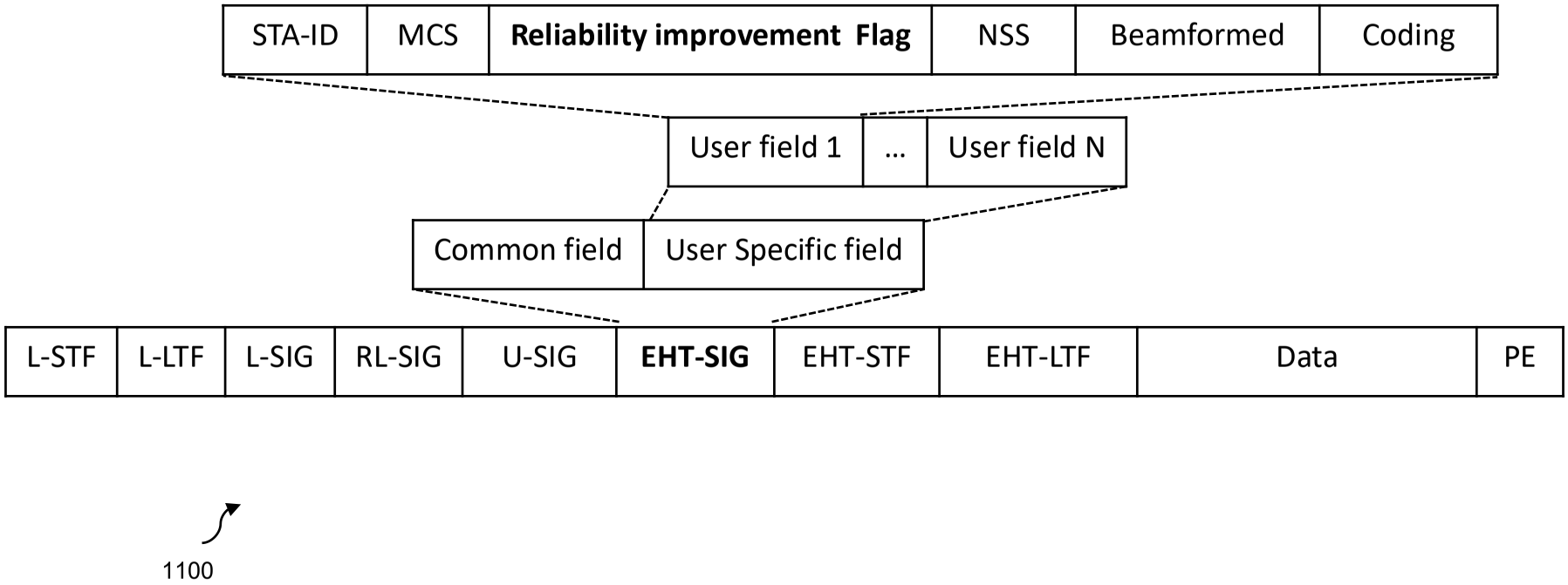

STA-ID
MCS
Reliability improvement Flag
NSS
Beamformed
Coding
User field 1
...
User field N
Common field
User Specific field
L-STF
L-LTF
L-SIG
RL-SIG
U-SIG
EHT-SIG
EHT-STF
EHT-LTF
Data
PE
1100

Figure 11

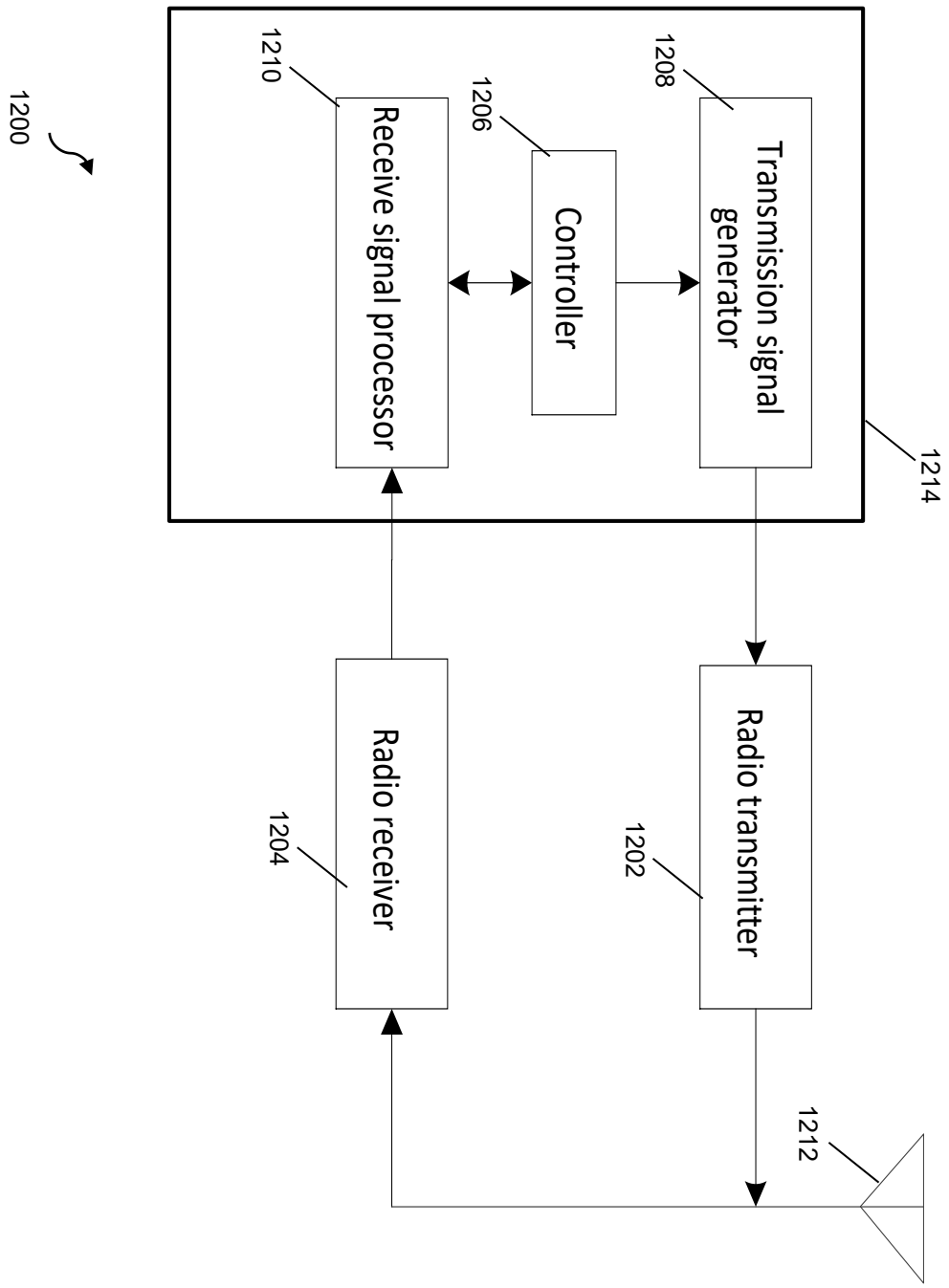

1200
1214
1208
Transmission signal generator
1206
Controller
1210
Receive signal processor
Radio transmitter
1202
Radio receiver
1204
1212

Figure 12

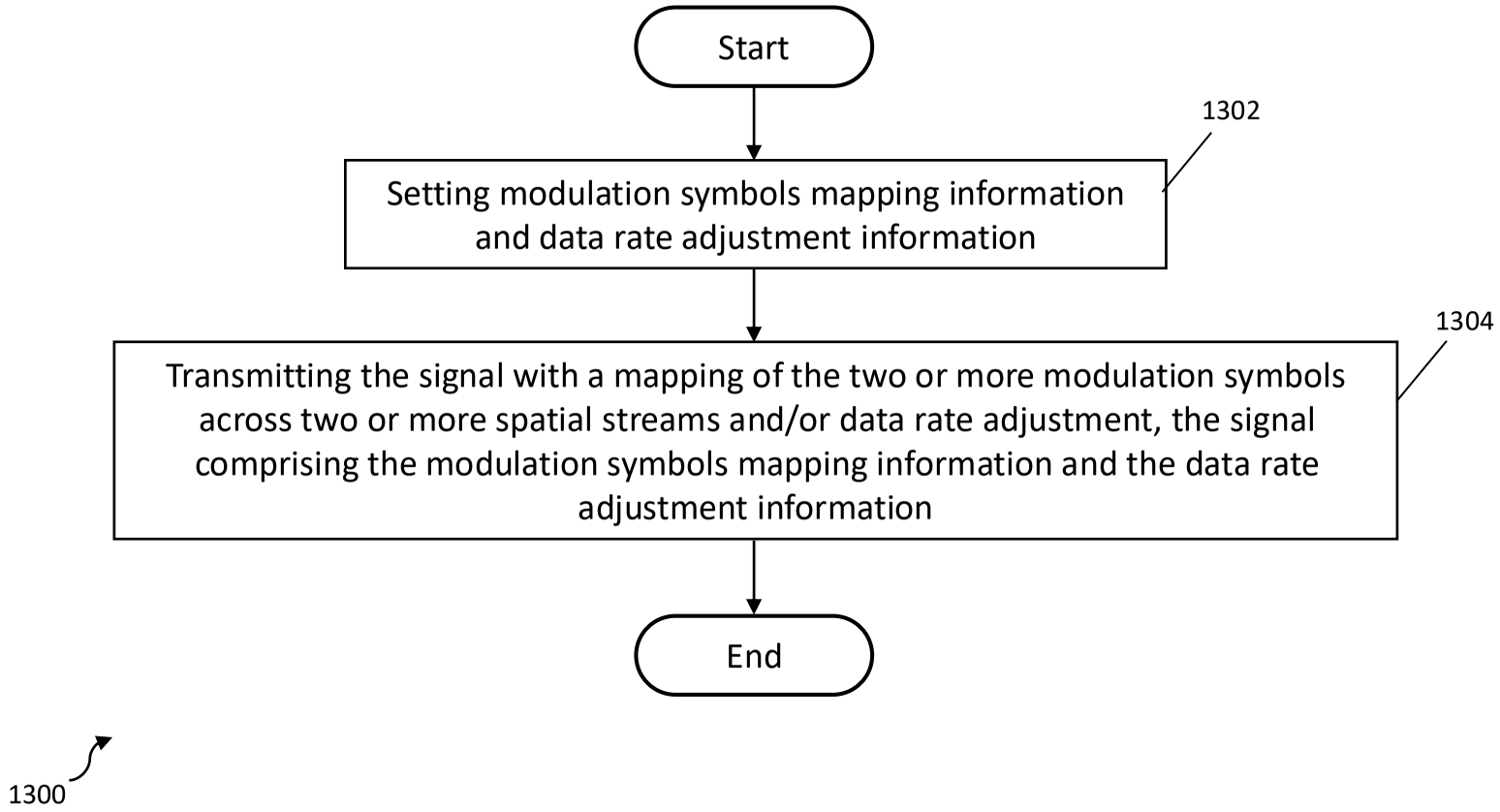

Start
1302
Setting modulation symbols mapping information and data rate adjustment information
1304
Transmitting the signal with a mapping of the two or more modulation symbols across two or more spatial streams and/or data rate adjustment, the signal comprising the modulation symbols mapping information and the data rate adjustment information
End
1300

Figure 13

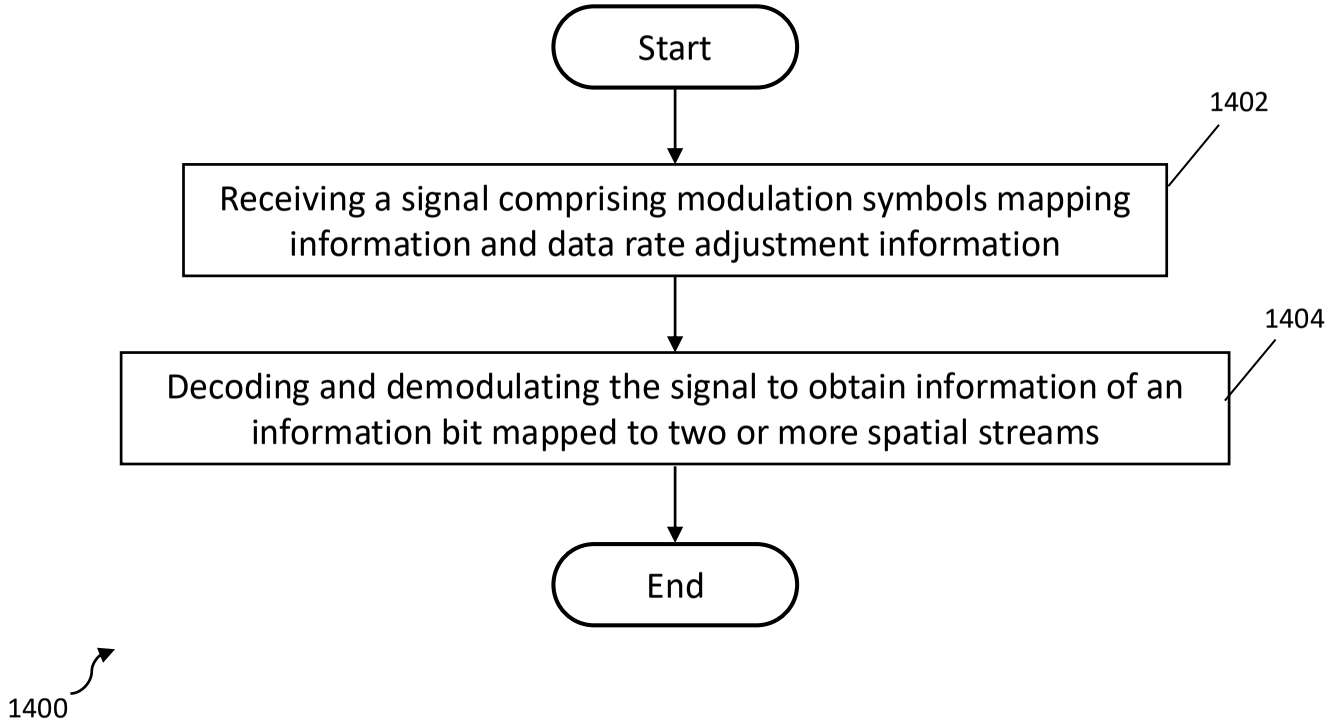

Start
1402
Receiving a signal comprising modulation symbols mapping information and data rate adjustment information
1404
Decoding and demodulating the signal to obtain information of an information bit mapped to two or more spatial streams
End
1400

Figure 14

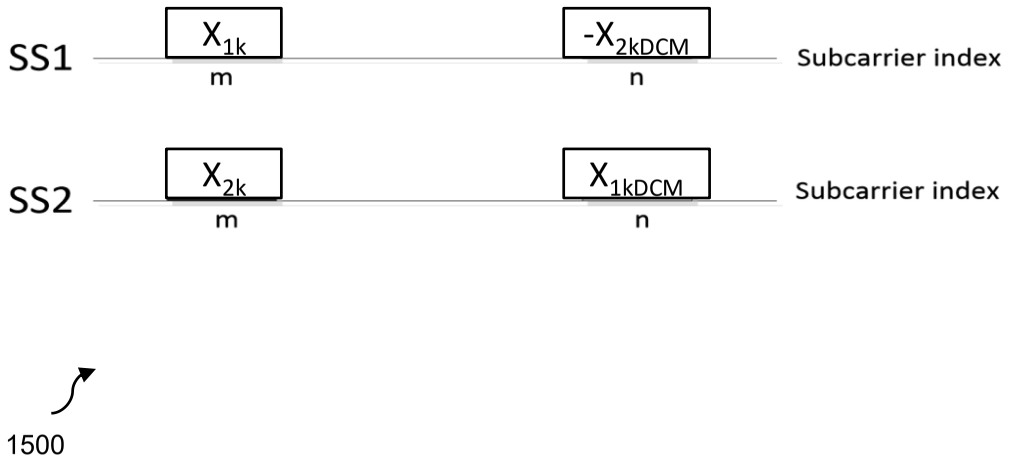

SS1
X_{1k}
m
$-X_{2kDCM}$
n
Subcarrier index
SS2
X_{2k}
m
X_{1kDCM}
n
Subcarrier index
1500

Figure 15

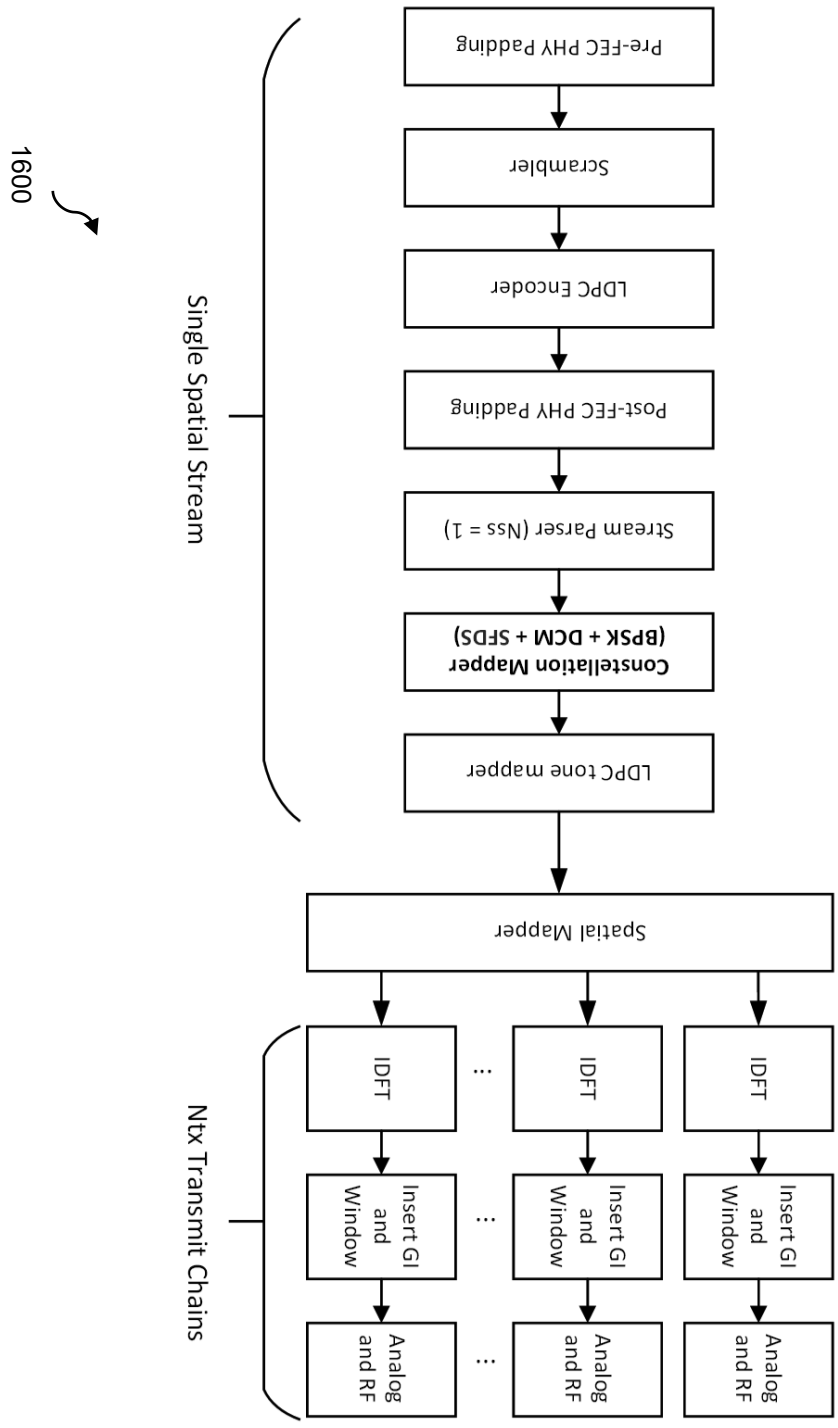
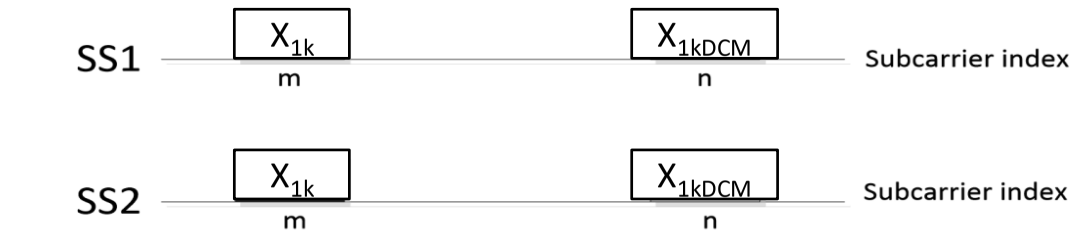

1600
Single Spatial Stream
Pre-FEC PHY Padding
Scrambler
LDPC Encoder
Post-FEC PHY Padding
Stream Parser (Nss = 1)
Constellation Mapper
(BPSK + DCM + SFDS)
LDPC tone mapper
Spatial Mapper
Ntx Transmit Chains
IDFT
IDFT
IDFT
Insert GI and Window
Insert GI and Window
Insert GI and Window
Analog and RF
Analog and RF
Analog and RF

Figure 16



1700

Figure 17

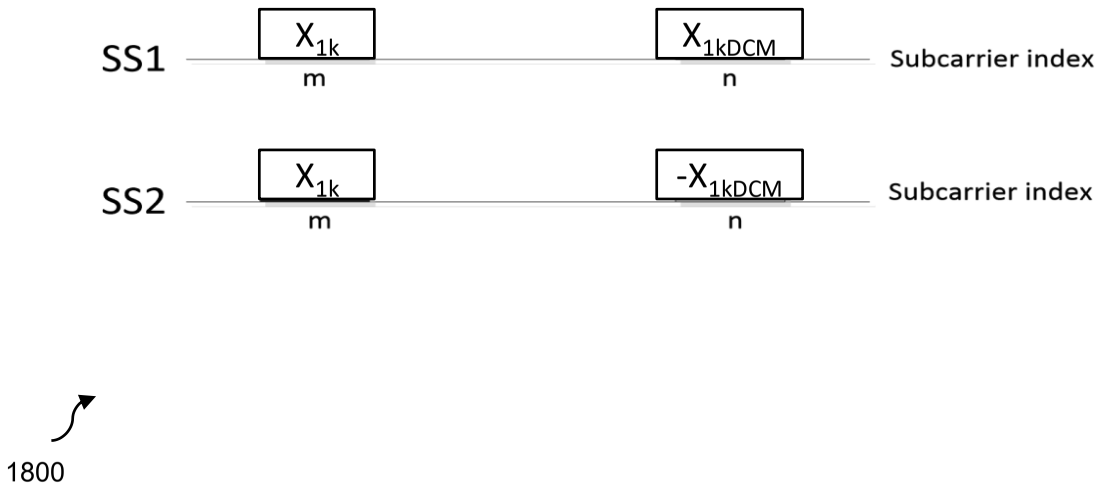

SS1
X_{1k}
m
X_{1kDCM}
n
Subcarrier index
SS2
X_{1k}
m
$-X_{1kDCM}$
n
Subcarrier index
1800

Figure 18

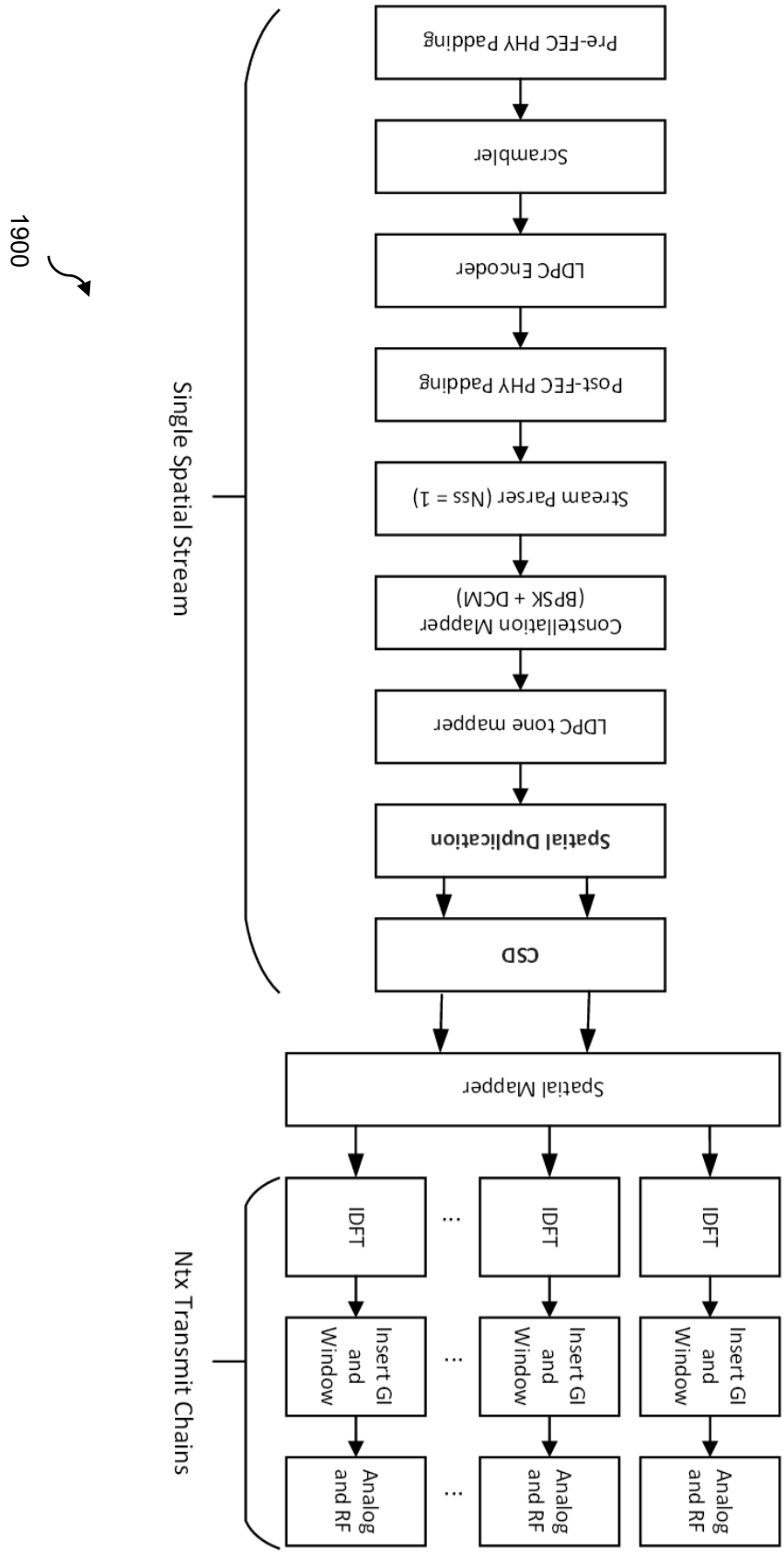

1900
Single Spatial Stream
Pre-FEC PHY Padding
Scrambler
LDPC Encoder
Post-FEC PHY Padding
Stream Parser (Nss = 1)
Constellation Mapper (BPSK + DCM)
LDPC tone mapper
Spatial Duplication
CSD
Spatial Mapper
Ntx Transmit Chains
IDFT
IDFT
...
IDFT
Insert GI and Window
Insert GI and Window
...
Insert GI and Window
Analog and RF
Analog and RF
...
Analog and RF

Figure 19

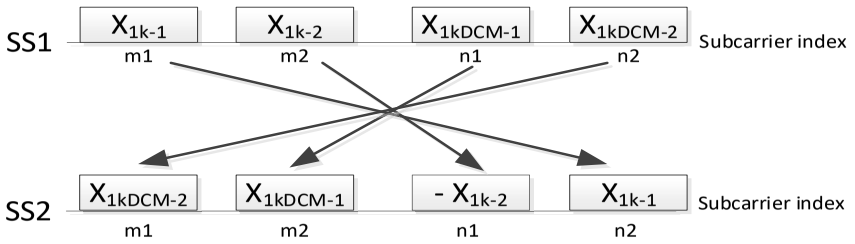

SS1
X_{1k-1}
X_{1k-2}
$X_{1kDCM-1}$
$X_{1kDCM-2}$
m1
m2
n1
n2
Subcarrier index
SS2
$X_{1kDCM-2}$
$X_{1kDCM-1}$
$-X_{1k-2}$
X_{1k-1}
m1
m2
n1
n2
Subcarrier index
2000

Figure 20

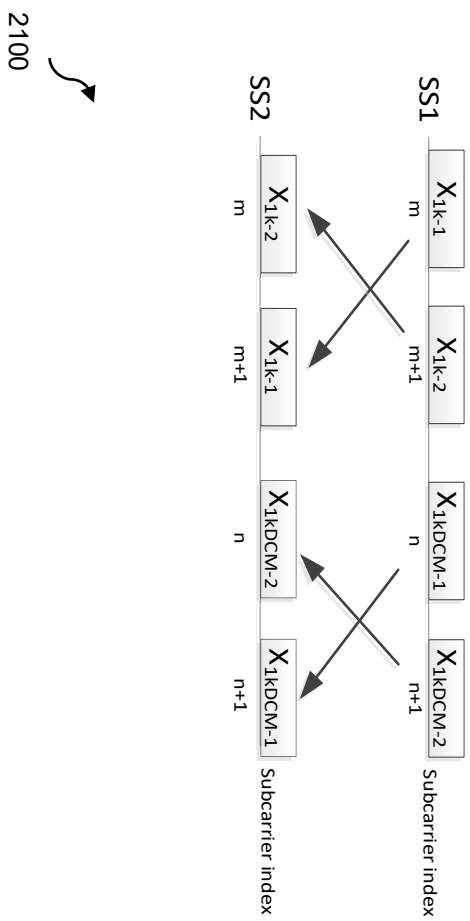

2100
SS1
SS2
X1k-1
X1k-2
X1kDCM-1
X1kDCM-2
X1k-2
X1k-1
X1kDCM-2
X1kDCM-1
m
m+1
n
n+1
m
m+1
n
n+1
Subcarrier index
Subcarrier index

Figure 21

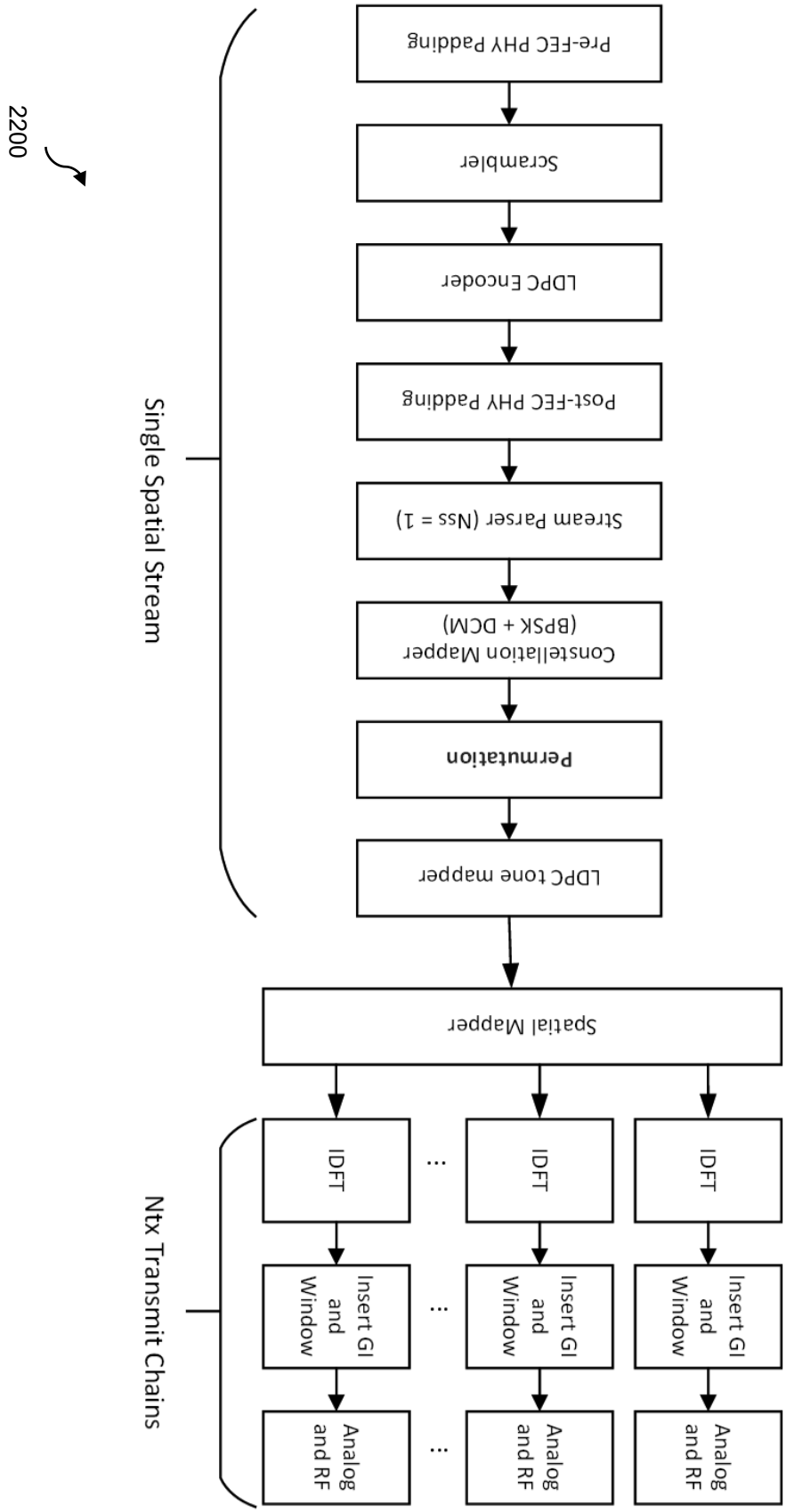

2200
Single Spatial Stream
Pre-FEC PHY Padding
Scrambler
LDPC Encoder
Post-FEC PHY Padding
Stream Parser (Nss = 1)
Constellation Mapper
(BPSK + DCM)
Permutation
LDPC tone mapper
Spatial Mapper
Ntx Transmit Chains
IDFT
IDFT
IDFT
Insert GI and Window
Insert GI and Window
Insert GI and Window
Analog and RF
Analog and RF
Analog and RF

Figure 22

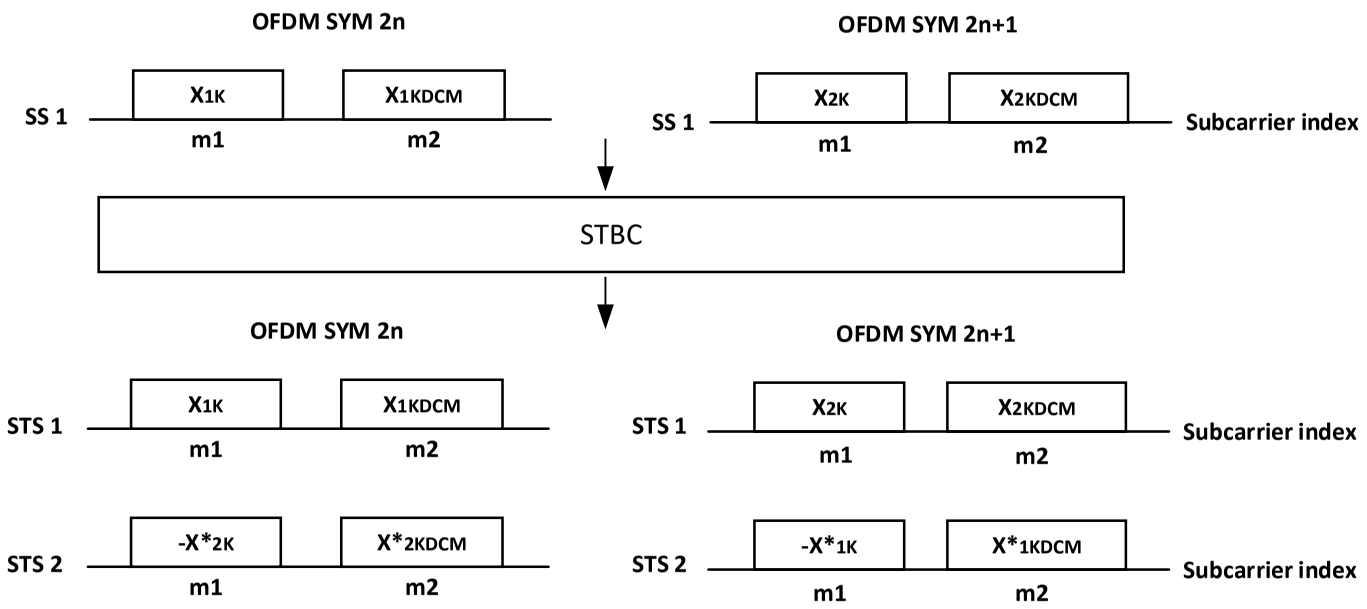

OFDM SYM 2n
OFDM SYM 2n+1
SS 1
X1K
X1KDCM
m1
m2
X2K
X2KDCM
Subcarrier index
STBC
STS 1
STS 2
-X*2K
X*2KDCM
-X*1K
X*1KDCM
2300

Figure 23

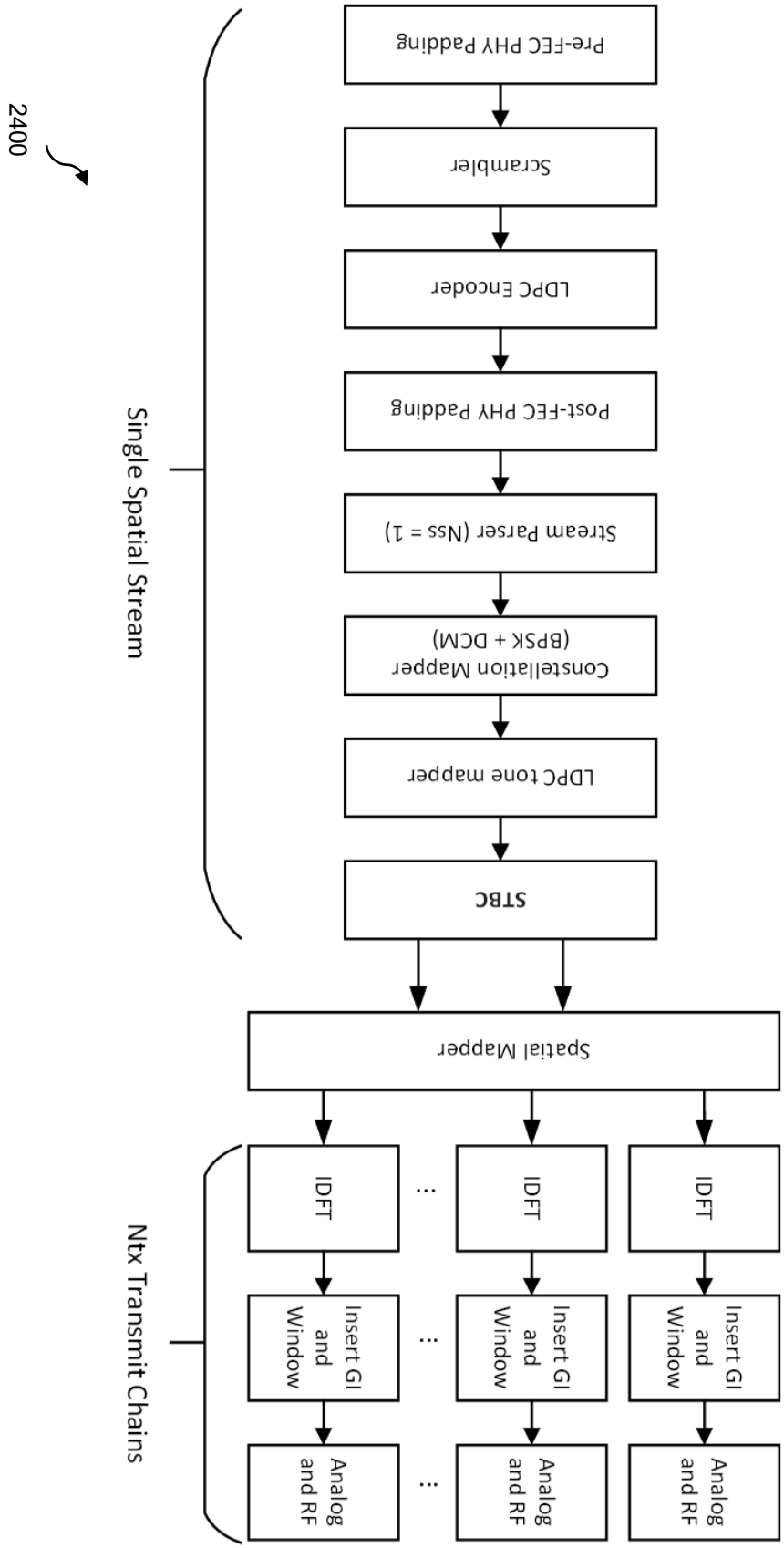

2400
Single Spatial Stream
Pre-FEC PHY Padding
Scrambler
LDPC Encoder
Post-FEC PHY Padding
Stream Parser (Nss = 1)
Constellation Mapper (BPSK + DCM)
LDPC tone mapper
STBC
Spatial Mapper
Ntx Transmit Chains
IDFT
Insert GI and Window
Analog and RF
...

Figure 24

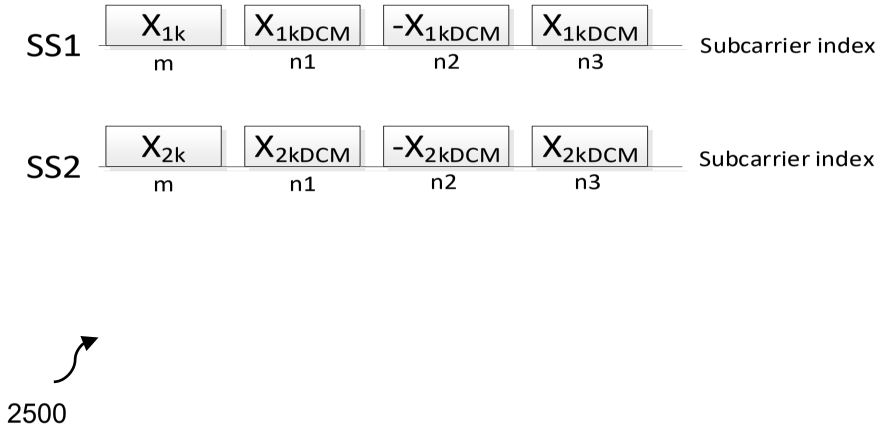

SS1
X1k
X1kDCM
-X1kDCM
X1kDCM
m
n1
n2
n3
Subcarrier index
SS2
X2k
X2kDCM
-X2kDCM
X2kDCM
m
n1
n2
n3
Subcarrier index
2500

Figure 25

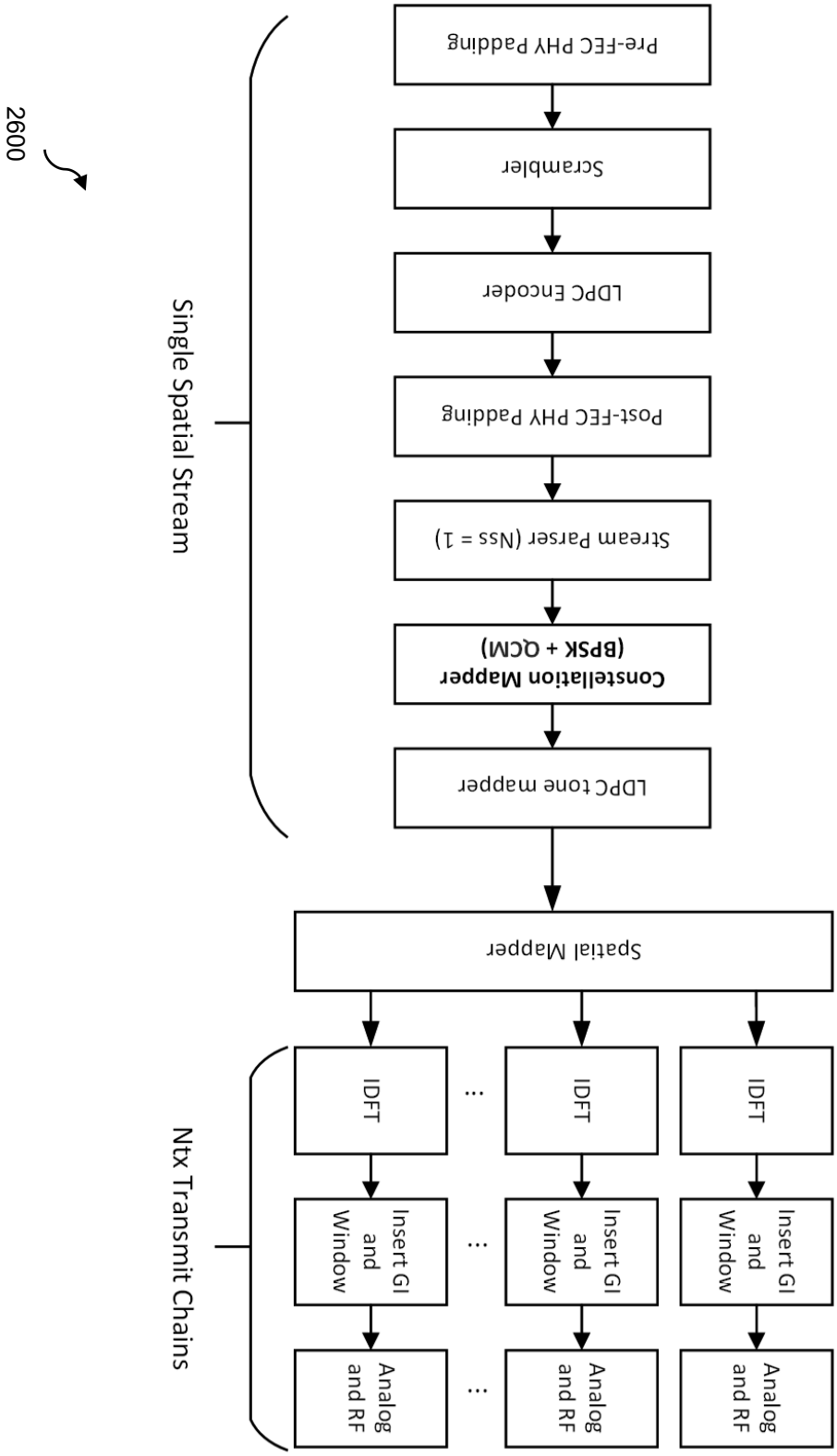
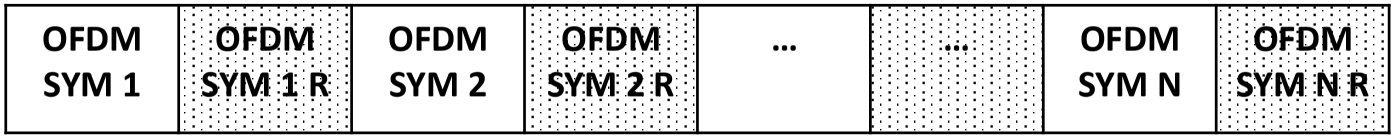

2600
Pre-FEC PHY Padding
Scrambler
LDPC Encoder
Post-FEC PHY Padding
Stream Parser (Nss = 1)
Constellation Mapper
(BPSK + QCM)
LDPC tone mapper
Single Spatial Stream
Spatial Mapper
IDFT
IDFT
IDFT
Insert GI and Window
Insert GI and Window
Insert GI and Window
Analog and RF
Analog and RF
Analog and RF
Ntx Transmit Chains

Figure 26



2700

Figure 27

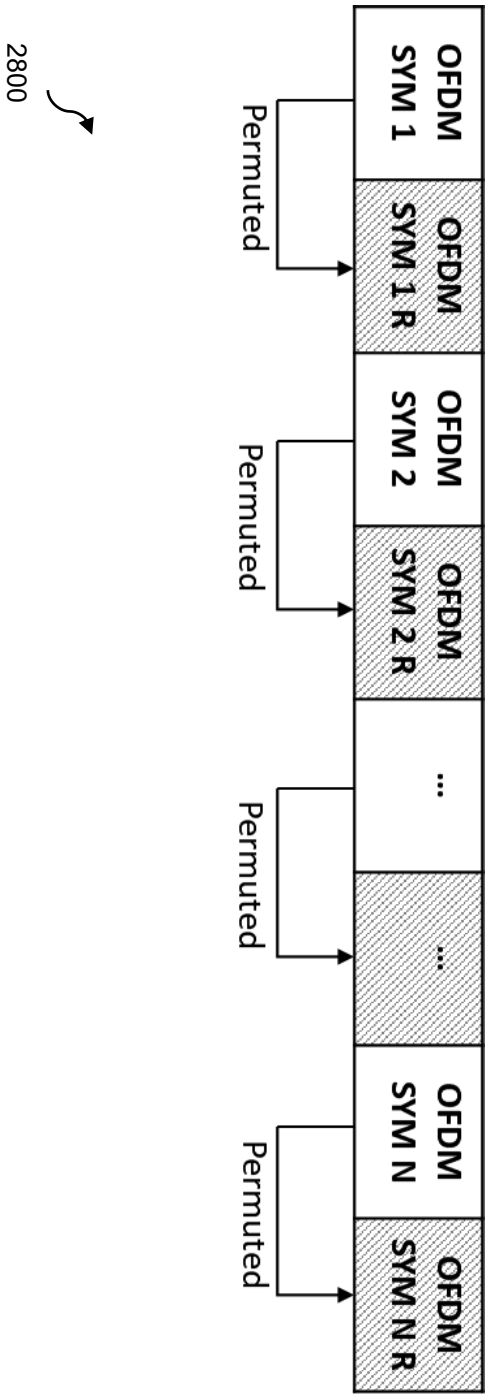

2800
OFDM SYM 1
OFDM SYM 1 R
OFDM SYM 2
OFDM SYM 2 R
...
...
OFDM SYM N
OFDM SYM N R
Permuted
Permuted
Permuted
Permuted

Figure 28

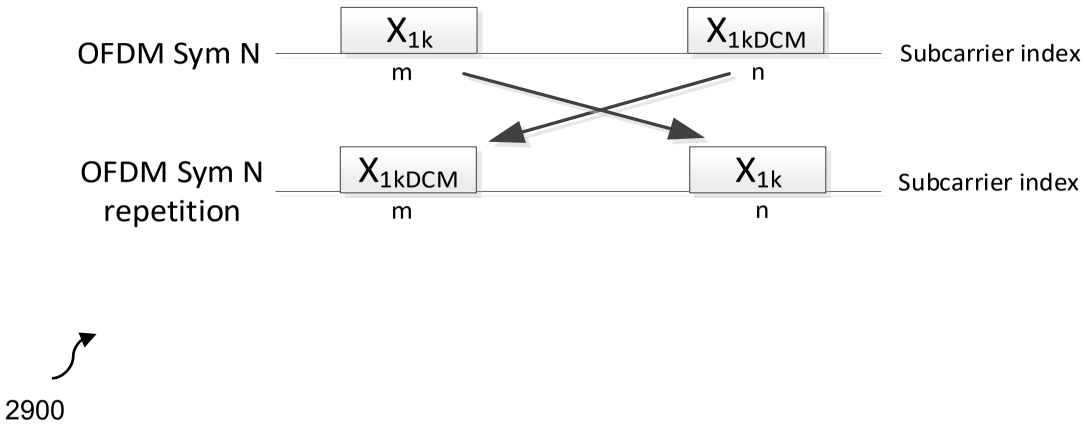

OFDM Sym N
X_{1k}
m
X_{1kDCM}
n
Subcarrier index
OFDM Sym N
repetition
X_{1kDCM}
m
X_{1k}
n
Subcarrier index
2900

Figure 29

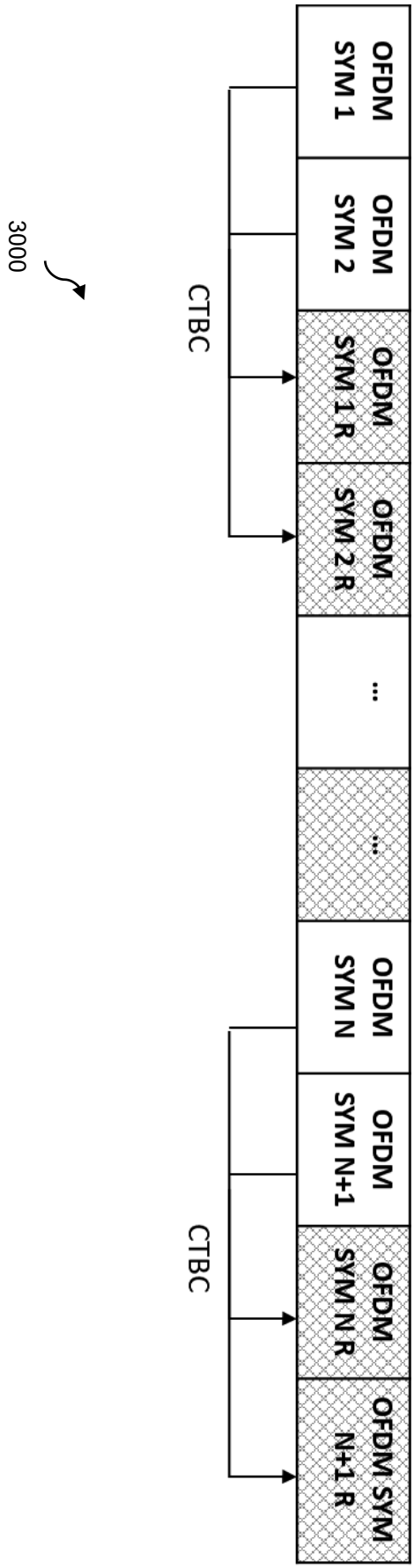

3000
OFDM SYM 1
OFDM SYM 2
OFDM SYM 1 R
OFDM SYM 2 R
...
...
OFDM SYM N
OFDM SYM N+1
OFDM SYM N R
OFDM SYM N+1 R
CTBC
CTBC

Figure 30

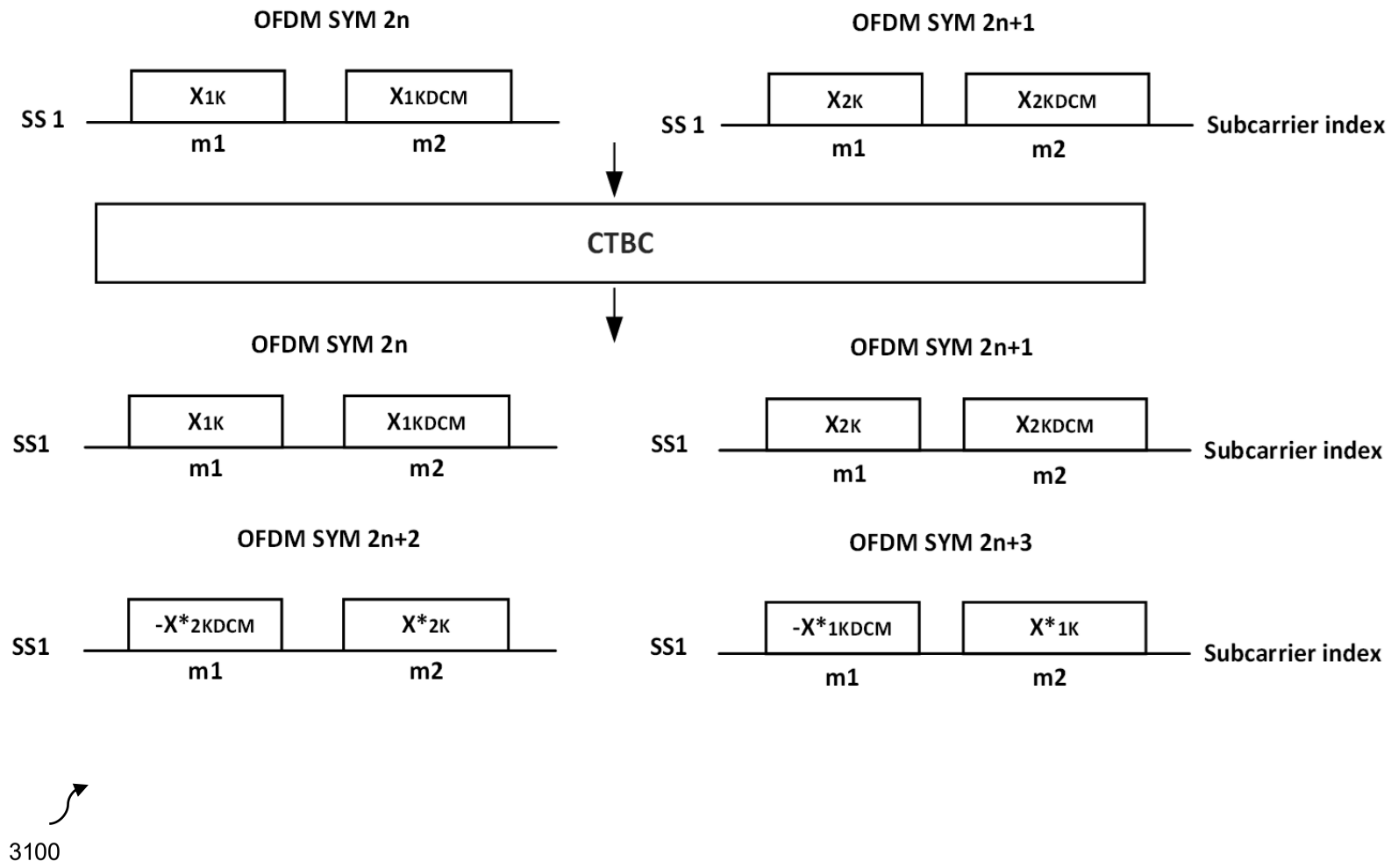

OFDM SYM 2n
OFDM SYM 2n+1
SS 1
X1K
X1KDCM
X2K
X2KDCM
m1
m2
Subcarrier index
CTBC
OFDM SYM 2n
OFDM SYM 2n+1
SS1
X1K
X1KDCM
X2K
X2KDCM
m1
m2
Subcarrier index
OFDM SYM 2n+2
OFDM SYM 2n+3
-X*2KDCM
X*2K
-X*1KDCM
X*1K
3100

Figure 31

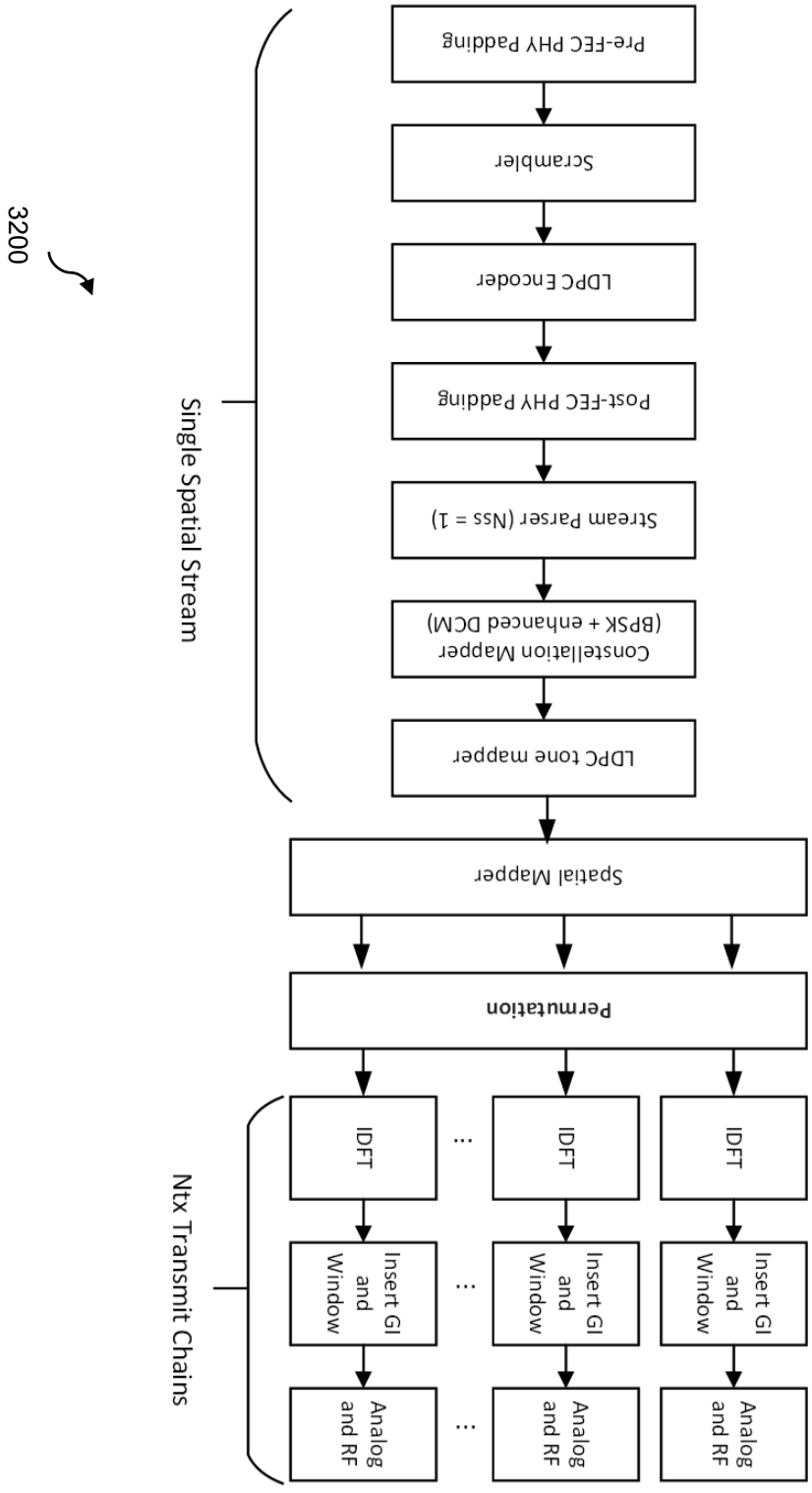

3200
Single Spatial Stream
Pre-FEC PHY Padding
Scrambler
LDPC Encoder
Post-FEC PHY Padding
Stream Parser (Nss = 1)
Constellation Mapper
(BPSK + enhanced DCM)
LDPC tone mapper
Spatial Mapper
Permutation
Ntx Transmit Chains
IDFT
Insert GI and Window
Analog and RF
...

Figure 32

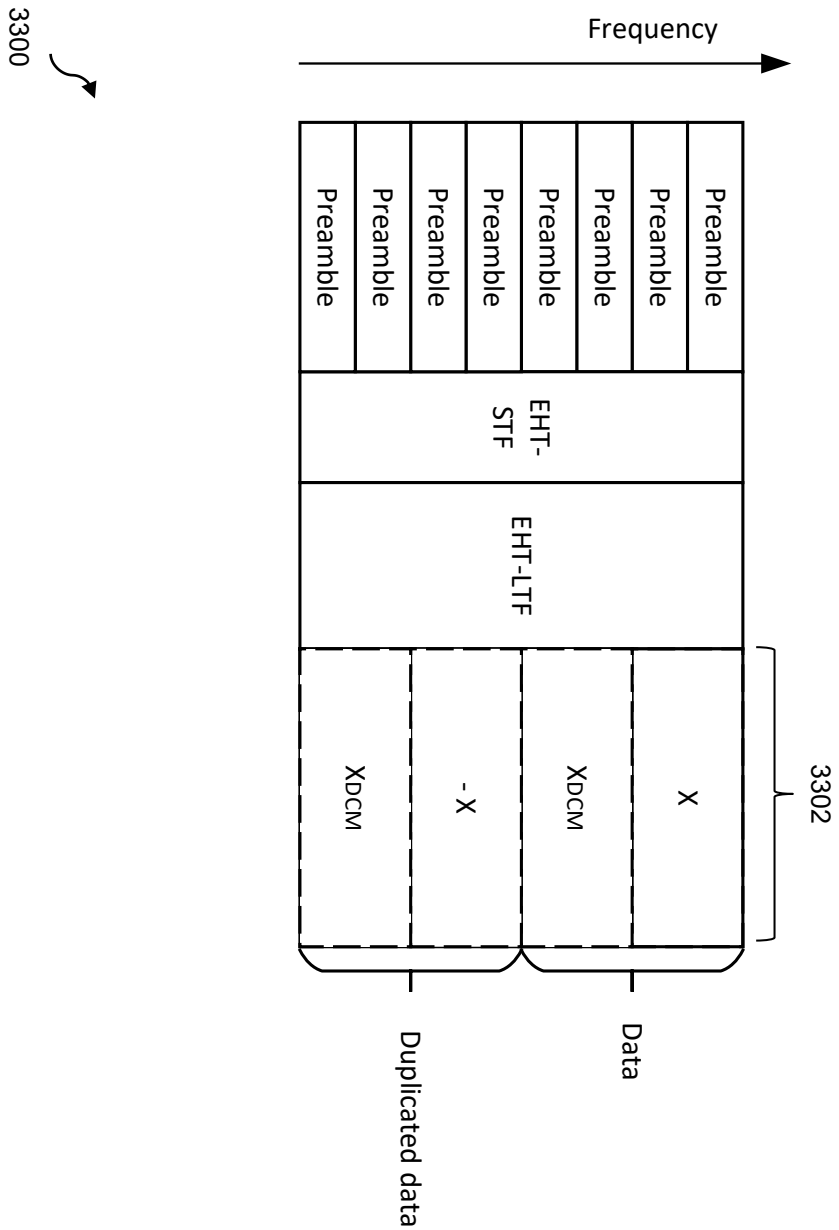

3300
Frequency
Preamble
Preamble
Preamble
Preamble
Preamble
Preamble
Preamble
Preamble
EHT-STF
EHT-LTF
X
XDCM
- X
XDCM
3302
Data
Duplicated data

Figure 33

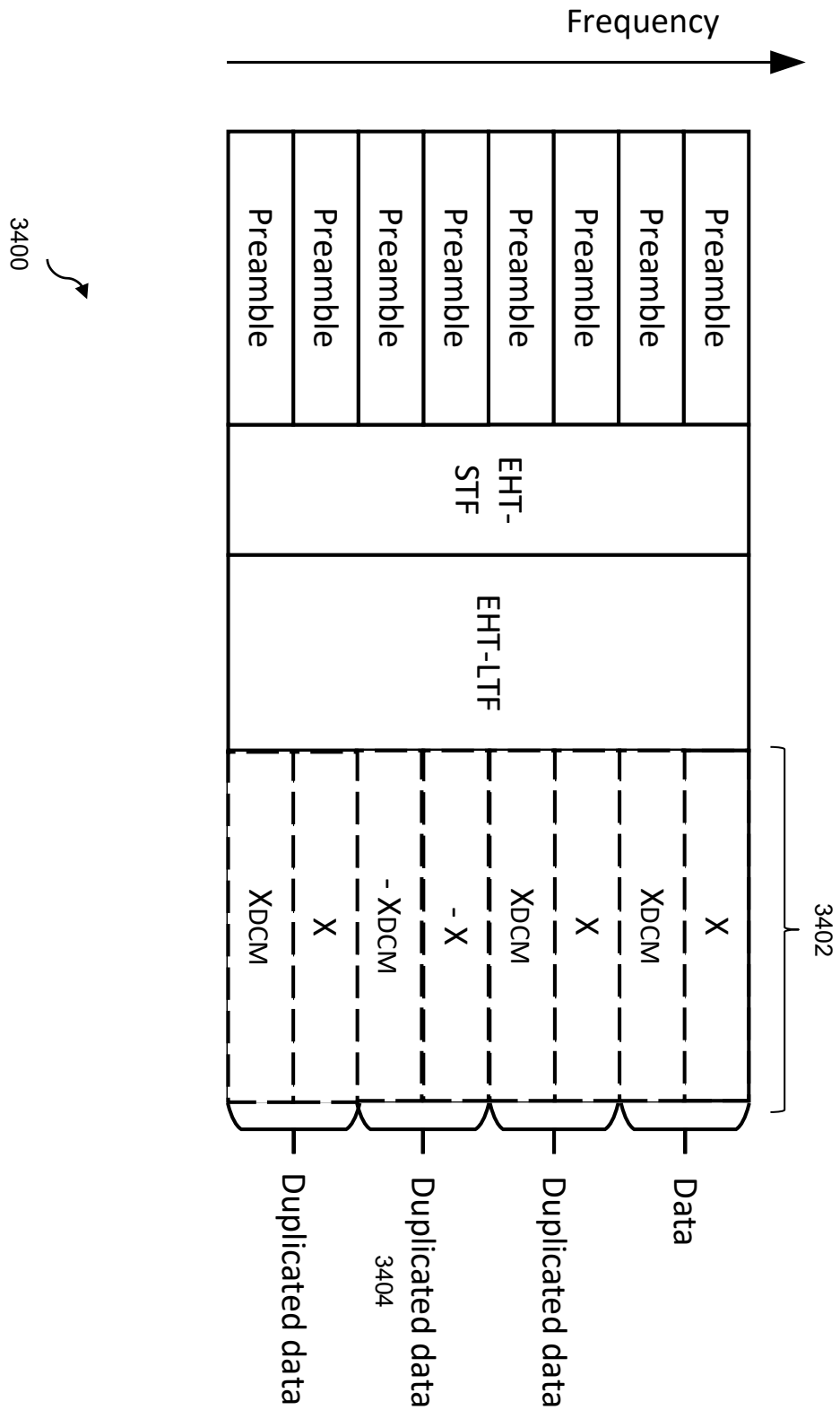

3400
Frequency
Preamble
Preamble
Preamble
Preamble
Preamble
Preamble
Preamble
Preamble
EHT-STF
EHT-LTF
X
XDCM
X
XDCM
- X
- XDCM
X
XDCM
3402
Data
Duplicated data
Duplicated data
3404
Duplicated data

Figure 34

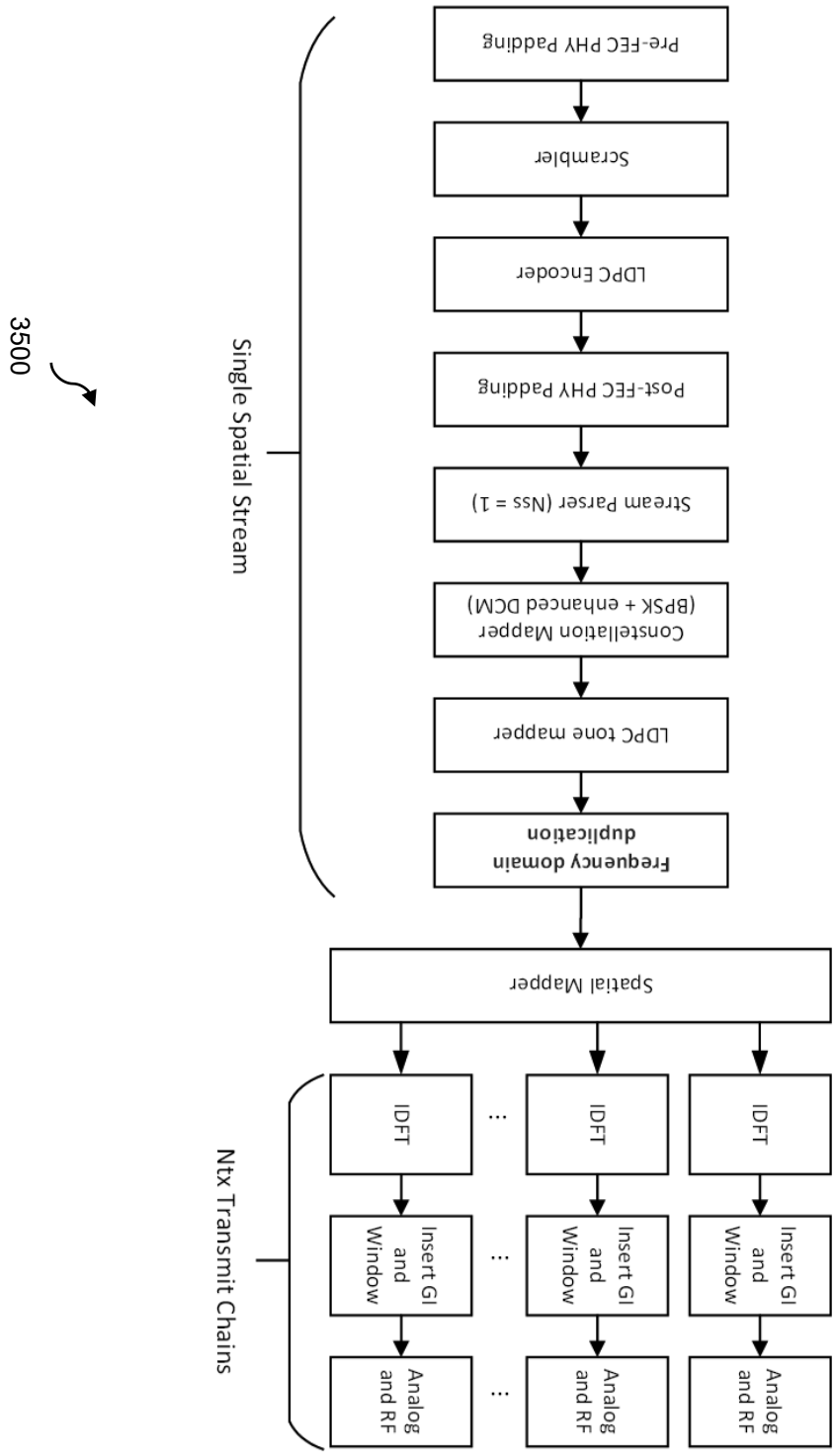

3500
Single Spatial Stream
Pre-FEC PHY Padding
Scrambler
LDPC Encoder
Post-FEC PHY Padding
Stream Parser (Nss = 1)
Constellation Mapper (BPSK + enhanced DCM)
LDPC tone mapper
Frequency domain duplication
Spatial Mapper
Ntx Transmit Chains
IDFT
Insert GI and Window
Analog and RF
...

Figure 35

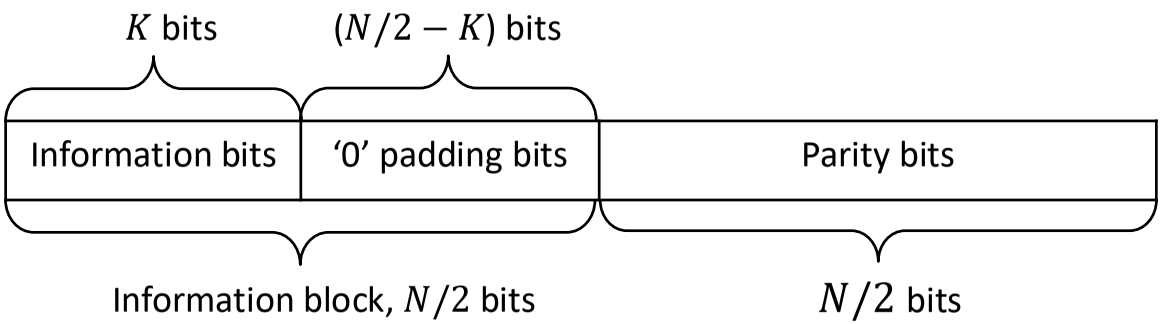
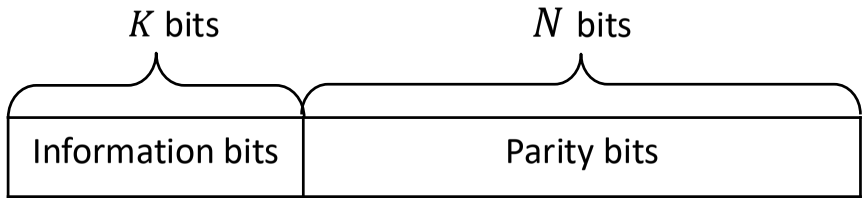

K bits
$(N/2 - K)$ bits
Information bits
'0' padding bits
Parity bits
Information block, $N/2$ bits
$N/2$ bits
3600

Figure 36



3700

Figure 37

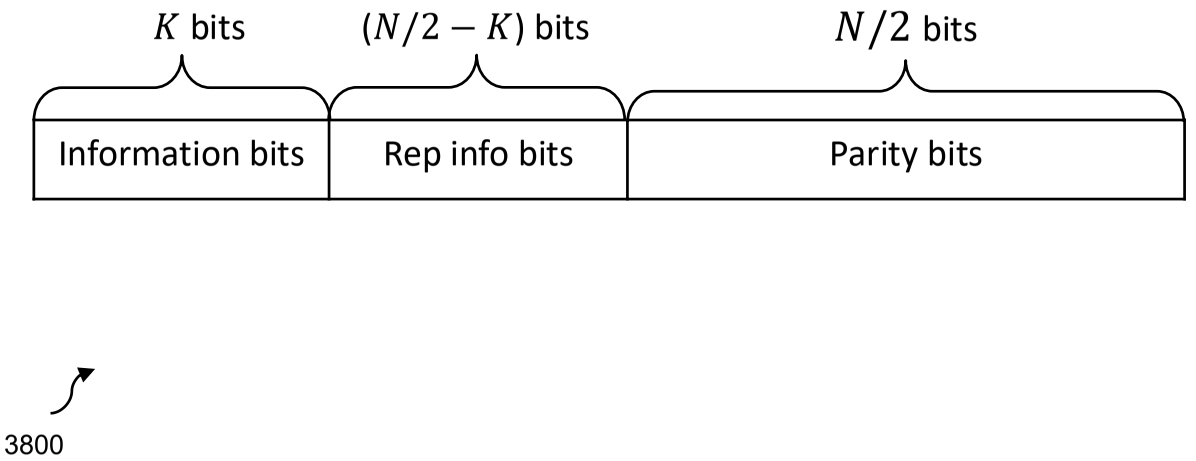

K bits
$(N/2-K)$ bits
$N/2$ bits
Information bits
Rep info bits
Parity bits
3800

Figure 38

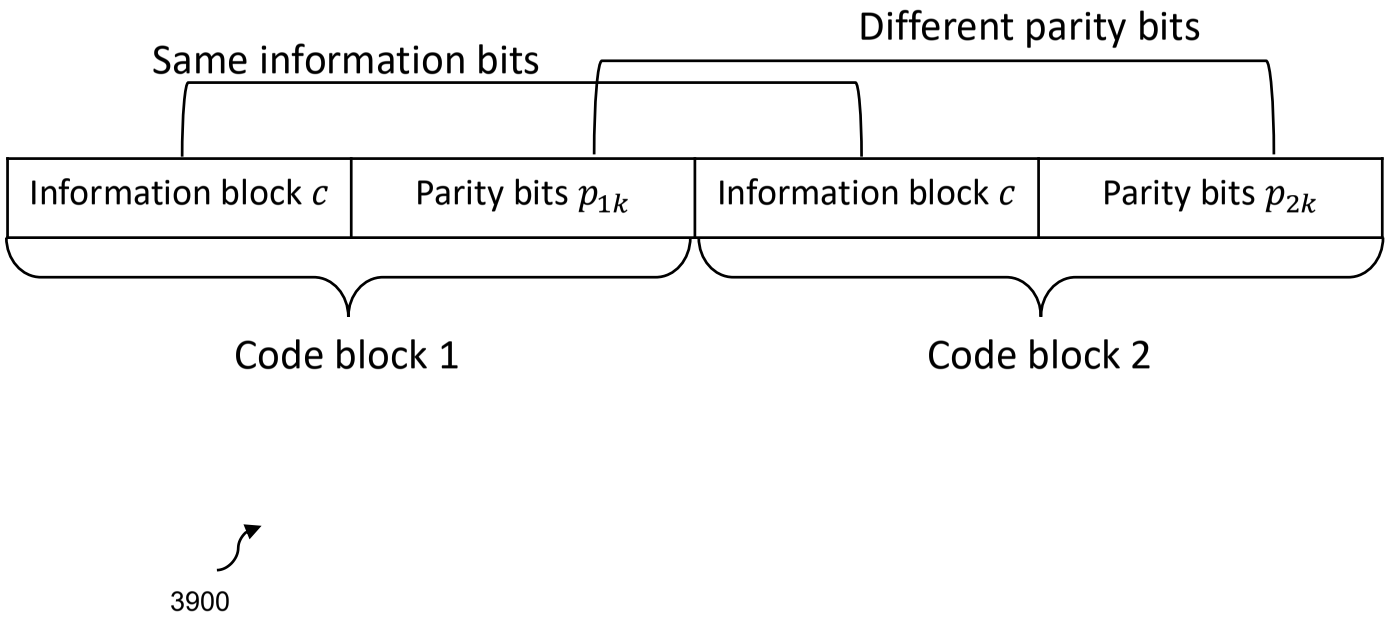

Different parity bits
Same information bits
Information block c
Parity bits p_{1k}
Information block c
Parity bits p_{2k}
Code block 1
Code block 2
3900

Figure 39

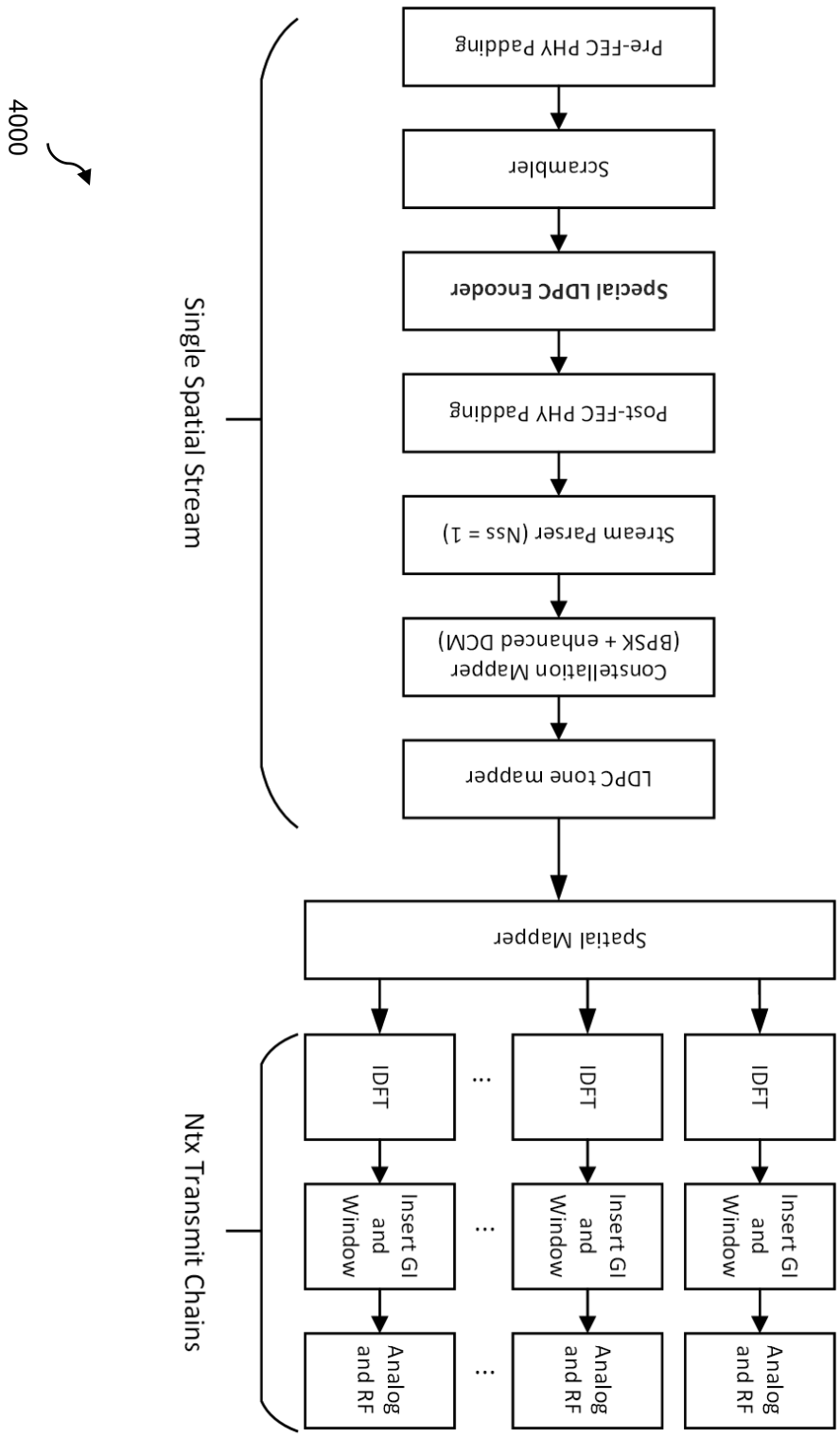

4000
Single Spatial Stream
Pre-FEC PHY Padding
Scrambler
Special LDPC Encoder
Post-FEC PHY Padding
Stream Parser (Nss = 1)
Constellation Mapper
(BPSK + enhanced DCM)
LDPC tone mapper
Spatial Mapper
Ntx Transmit Chains
IDFT
IDFT
IDFT
Insert GI and Window
Insert GI and Window
Insert GI and Window
Analog and RF
Analog and RF
Analog and RF

Figure 40