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2005 01 25(21) 10-2002-0012740
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2002 09 16

(30)	1020010012475	2001 03 10	(KR)
	1020010014161	2001 03 19	(KR)
	1020010019373	2001 04 11	(KR)

(73) 416

(72) 3 6 706

1 203

1102 203

1204 303

1054-3 201 403

17가17-94

1 18

(74)

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(54)

가,

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1

Preamble, Walsh Cover, PPDCCH, SPDCCH. PDCH

1	1	(MAC ID)	(Subpacket Length)
2	1		
3	1		
4	1	(MAC ID)	(Subpacket Length)
5	4		
6	1	(MAC ID)	(subpacket length)
7		1 (PPDCCH), 2 (SPDCCH)	
8		1 (PPDCCH), 2 (SPDCCH)	
9	2 (PDCH)	1 (PPDCCH), 2 (SPDCCH)	
H) 10	2 (PDCH)	1 , 2	
11	2	(MAC ID)	
12	2	(MAC ID)	
13	2	(MAC ID)	
14	2		
15	3 (PDCH)	1 (PPDCCH), 2 (SPD	
16	3	(MAC ID)	
17	3		
18	2	(MAC ID)	
19	3		
20			

1xEVDO (: 1xEVDO 가
 1xEVDV PDCH(Packet Data Channel)
 (TDM: Time Division Multiplexing, TDM)
 TDM
 가
) (PDCCH : Packet Data Control Channel)
 ,
 , (Sub-packet) , MAC(Media Access Control) ID,
 (Payload) (SPID : Sub-packet ID), ARQ(Automatic Repeat Request)
 (Channel ID) (Sub-packet) (Sub-packet)
 TDM
 가 가 MAC ID
 (Sub-packet) (Access) MAC ID
 가 QPSK, 8PSK, 16QAM, 64QAM
 (Payload) (Sub-packet)
 (SPID) (Sub-packet)
 ARQ(Automatic Repeat Request)
 (Sub-packet) 2 , MAC ID 6 , (Payload) 2 , SPID 2 , ARQ
 (Channel ID) 2 (Sub-packet) 2
 (Payload) 2 (Access) ,
 MAC ID MAC ID
 (Sub-packet)
 (Payload) , SPID, ARQ (Channel ID),
 (Sub-packet) (sub-packet)
 (Payload) ,
 1 (Forward Primary Packet Data
 Control Channel) 2 (Forward Secondary Packet Data Control Channel)
 (PDCH : Packet Data Channel) (CDM: Code Division Multiplexi
 ng) 1 2
 ,
 가
 ,
 가
 (MAC ID)
 ,
 가,

1 103 ()
 408 (correlation) 409 408409 1
 409 1 (Cover) 410
 409 , 가 410 < 1> (mappin
 g) , 가 410 가 가
 411 411 407 410
 . QPSK 412 411
 . 413 QPSK 412
 (6) 가 6 413 (12,6)
 (MAC ID) , (MAC ID)
 4 5 4 5 4 5 2
 가 6 가 5 , 4 5 2
 5 4 5 2 5 2
 5 , PN 501 PN 1 502
 PN 501 503 PN PPDCCH
 1 2 502 504 507 2 503
 506 506 2 503 507
 1 502 506 507
 504 (Threshold) 505 PPDCCH
 504 502 505
 504 (Threshold) 505
 504 (threshold) (threshold)
 505 PPDCCH 507 PPDCCH
 505 가 PPDCCH가
 1 504 PPDCCH 505 PPDCCH
 QPSK 508 507 QPSK
 (IFHT : Inverse Fast Hadamard Transform) 309 IFHT
 2 202 509 (co
 rrelation) 510 509 1 511
 510 1 PPDCCH가 1 511
 510 (Cover) , 가 < 1> (mapping)
 , 가 511 가 ()
 512 511 가 511
 512 QPSK 508 511
 (6) 513 512 513 (12,6)
 (MAC ID) 가 6 , (MAC ID) 가
 5 413 (12,5)

6 1 (MAC ID) (subpacket length) 6

3 6 PN 601 PN 602

2 604 2 603 PN 603 SPDCCH 1 605 1 QPSK 606 607 6

05 604 QPSK 607 (combiner) 607 (combinin

g) 608 (Payload Size) 608 (48,6) (Subpacket ID) 2 ARQ 2 가

가 1 (SPDCCH) (PPDCCH)

7 1 (PPDCCH), 2 (SPDCCH)

(PDCH) 7 (SPDCCH) (PDCH) T_A, T_B, T_C 1 (paylo

ad) 1 (PPDCCH) (T_A, T_B, T_C) SPDDCH PDCH 8 SPDDCH가 PDCH

PDCH PDCH가 2 SPDCCH 4 PPDCCH T

A, T_B, T_C PDCH PPDCCH (MAC ID) PDCH (subp

acket length) SPDCCH (MAC ID) 가 PDCH

PPDCCH SPDCCH PDCH (buffer) SPDCCH (PPDCCH), 2 (SPDCC

H) 8 1 (PDCH) 1 (PPDCCH), 2 (SPDCC

5 8 801 PN PPDCCH가 4

1 PPDCCH PPDCCH PPDCCH

PDCH (buffering) PPDCCH, SPDCCH PDCH SPDCCH (Buff

ering) 802 SPDCCH PDCH PPDCCH가 PPDCCH

PPDCCH 803 PPDCCH

PPDCCH PPDCCH PPDCCH가 802 가

(buffering) PPDCCH PPDCCH 804 5 ()가

4 1 805 4

PPDCCH (MAC ID) (MAC ID)

806 가 801 가 (buffering) 가

PPDCCH 가

807

가 1 2 807 (PDCH) 가 2 (buffering) S 4

808 SPDCCH PDCH 가 4 SPDCCH가 PDCH 2 SPDCCH PDCH 가 809 SPDCCH

PDCCH PDCH 2 가 2 SPDCCH PDCH 가 (combining) 810

PPDCCH , ARQ SPDCCH 가 PDCH 811

807 가 1 2 1 2 SPDCCH (c

ombining) 814

PPDCCH , ARQ SPDCCH 가 PDCH 815

< 2 > 9 2 3 1 (PPDCCH), 2 (

SPDCCH) 9 (PDCH) 가 (Access) 가

902 (MAC ID) 가 < 2> (MAC ID) 가 < 3> (MAC ID) 가 903

가 (Access fail) , 가 (MAC ID) 1 (

< 2> < 3>) 1

[2]

MAC ID		PPDCCH	I Q
00000	O	512 48	In - Phase
00001	O		Quadrature - Phase
00010	X	512 49	In - Phase
00011	O		Quadrature - Phase
00100	X	512 50	In - Phase
00101	X		Quadrature - Phase
00110	O	512 51	In - Phase
00111	X		Quadrature - Phase
.	.	.	.
.	.	.	.
.	.	.	.

[3]

MAC ID		PPDCCH	I Q
00000	O	512 48	In - Phase
00001	O		Quadrature - Phase
00010	X		In - Phase
00011	O		Quadrature - Phase
00100	X	512 49	In - Phase
00101	X		Quadrature - Phase
00110	O		In - Phase
00111	X		Quadrature - Phase
.	.	.	.
.	.	.	.
.	.	.	.

$\langle 2 \rangle$ $\langle 3 \rangle$ (MAC ID) (MAC ID) (MAC ID) 1
 (PPDCCH) , (MAC ID) 1
 가 , (MAC ID) 1 I(In-Phase)
 e) , Q(Quadrature - Phase) 가 , 1 (MAC ID) (I
 Q) , 1 16 PPDCCH
 , 32 (MAC ID) 32
 , $\langle 3 \rangle$ 1 (PPDCCH) 2 (SPDCCH) (MAC ID)
 () , 2 2
 (MAC ID) 9 (MAC ID) 1
 , 904 (PDCH) $\langle 2 \rangle$ $\langle 3 \rangle$ (Sub - packet) (I
 Q) , 905
 2 (SPDCCH) (PDCH)
 $\langle 4 \rangle$ 2 ,
 2 .

[4]

Sub - packet	SPDCCH (N,)	PDCH (M,)
00	1	1
01	2	2
10	4	4
11	4	8

10 2 1 11 2 13
14 (MAC ID) 가 < 2> 1 (MAC ID)
10 (PN) 1001 (I Q)
1003 1 1
(PDCCCH) 1 PPDCCH가 2 (SPDCCH) PPDCCH (PDCH)
(buffering) PPDCCH가 PPDCCH, SPDCCH PDCH
, PPDCCH가 SPDCCH PDCH
017 1 (buffering) 1005 2 1
1 (PPDCCH)
1003 가 가
1005 1 (Sub-packet)
, 1007 1 (Sub-packet) 가 < 4>
2 (N) 가 2
가 (buffering) 2 가 4 2 (SPDCCH) (PDCH)
(PDCH) 2 SPDCCH PDCH 가
2 SPDCCH PDCH 1009 가
SPDCCH (combining) 1011
, 1013 (SPID : subpacket ID)
(Payload) , ARQ 1015 PPDCCH S
PDCCCH 가 PDCH (MAC ID)
11 2
11 1101 (sub-packet) 3 (3,2) (bl
ock encoder) 1102 < 2> I/Q 1103 1101
(1104 1105) 1103 1102 1104 1
I (1 가) Q (2) 512
() 가 1 1,536 1 1105 2
가 2 1,536 (chips) 1 512
1,536
(I Q)
12 2 (MAC ID)
, ARQ
12 1201 6 12 (12.6)
1201 1102 1202 1102 1202 1201 1202
QPSK 1203 QPSK 1203 1203 1204 1205
QPSK 1203 2 256

PN ,

13 2 (MAC ID) 13 11

13 1303 (MAC ID) 1303 1302 1303 < 2> 2> (1301 1302) 1301 1302 1

1,536 1303 512 3 1301 1302 1304

1304 1303 1305 1306 1303 1305 1304

1303 1306 1303 1306 1303 1306 1303

1304 1306 1306 3 2

1303 (3,2) 14 2 14 13 14 1305 12

1 14 1401 1402 (PN 6) 2 QPSK 1403

256 1402 6 QPSK 12 (sub-packet)

1303 13 1 1303 N (sequence combiner) 1404 12

1404 1303 1405 QPSK 1404 12 6

(12,6) 1405 12 2

2 ARQ 가 2

가 2 1 1

< 3 > 3 1 (PPDCCH), 2 (SPD CCH) 15 16 17

(PDCH) 18 19 (MAC ID) (MAC ID) 가 < 3>

1 15 (PN) 1501 (I Q) 1

1503 1

(PPDCCH) 1 , PP (

DCCH PDCH) PPDCCH가 2 PPDCCH, SPDCCH PDCH SPDCCH PDCH

(buffering) PPDCCH가 PPDCCH가

1505 1519

1 (buffering) 1 (PPDCCH)

1503 가

, 3 가
 1505 1 , 1507 1
 1509 (Sub-packet) 가 < 4>
 2 (N) 가 2
 가 (buffering) 2 (SPDCCH) (PDCH)
 가 4 2
 SPDCCH PDCH 2 SP
 4 SPDCCH PDCH가
 DCCH PDCH 가
 1511 SPDCCH
 N 1511
 , 1513
 (MAC ID) , ARQ
 1515 (MAC ID) 가
 (MAD ID) 가
 가 (MAC ID) 가
 가 , 1517 (MAC ID) 가
 (PDCH) 1507 1513 (Sub-packet)
 , ARQ
 16 3
 16 1601
 1601 2 (sub- packet) 3 (3,2)
 (block encoder) 1602 < 3> I/Q 1603
 (1604 1605) 1602 1604 1605 16
 01 (1) Q (2)
 1603 1102 512
 1,536 (chips) 1
 11 (I Q)
 1 가 2 3
 , 2 가
 17 3
 , ARQ (MAC ID),
 17 (convolutional encoder) 1701
 24 가 1701 가 12 (K) '9' 1/2
 1602 1701 1702
 1702 1602 1701
 24 QPSK 1703 QPSK 1703 1702 1704 1705
 QPSK 1703 2 PN 128
 18 2
 18 16
 18 1803 (MAC ID)
 < 3> (1801 1802) 1803
 < 3> 1804 1803
 1801 1802 1 1,536 1803 512
 3 1804 1803
 1801 1802 1805 1806 1805
 1804 1803
 1803 1803 180

6 1806 , 1803 1804 1806 .
 1806 1803 1804 1803 1806 3
 2 (3,2)
 19 3 19 18 19 17 1
 19 1901 1902 (PN) 2
 128 12 QPSK 1903
 1901 1902 12 QPSK 24
 1803 18 1 (sub-packet)
 < 4> 2
 N
 (sequence combiner) 1904
 1803 1903 2
 1904 1905 24
 (K)가 '9' 1/2
 2 , 2
 2 ARQ 가 1803
 (PDCH)
 3 , 1 가
 2 , 1
 20 2000 1
 1
 DCH) 2002 , 2 2001 2001 (P
 2000 2001 1
 , ARQ 2 2
 ID) 가 , 3 (MAC
 2002 1 2 2002 가
 , 1 2000
 2002 가 2001
 2002 , 3 가 2
 2002 ,
 2002 가
 가 가

(57)

1.

1 1
 2 , 1
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 1 2 ,

1 가 1 1
 2 가 2 2
 1 2 ,

2.

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3.

2 ,

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4.

2 ,

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5.

2 ,

6.

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6 ,

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9.

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1

2 ,

1 , 가 1 1 1
 2 가 2 1 , 2
 2 2

10.

9 ,

11.

9 ,

12.

9 ,

13.

I Q 1, 2 ,

1, 2

14.

13 ,

15.

16.

15 ,

, ARQ

17.

18.

17 ,

19.

20.

19 ,

가

가

가

21.

,

1

2

1

1

2

2

22.

21

23.

21

24.

21

(block coding)

25.

I Q

I

Q

가

26.

25

가

27.

26

, ARQ

28.

25

가

가

29.

28

, ARQ

30.

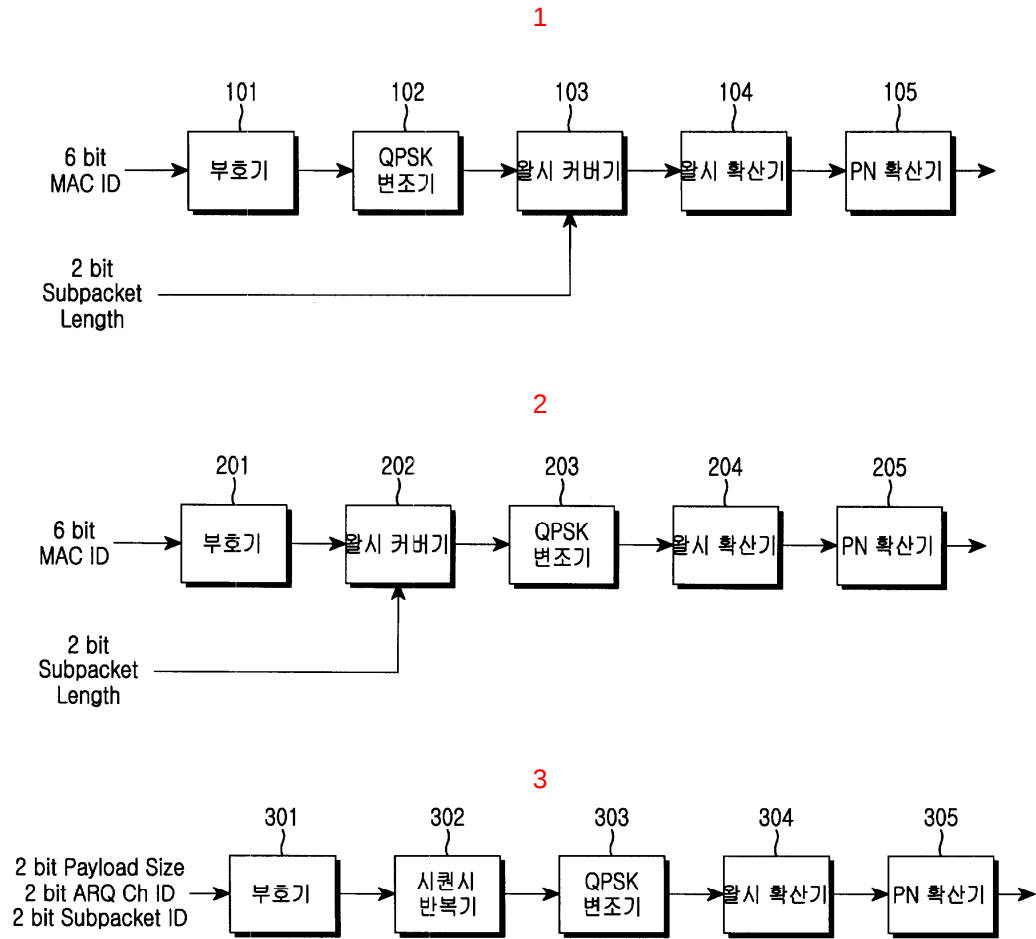
25

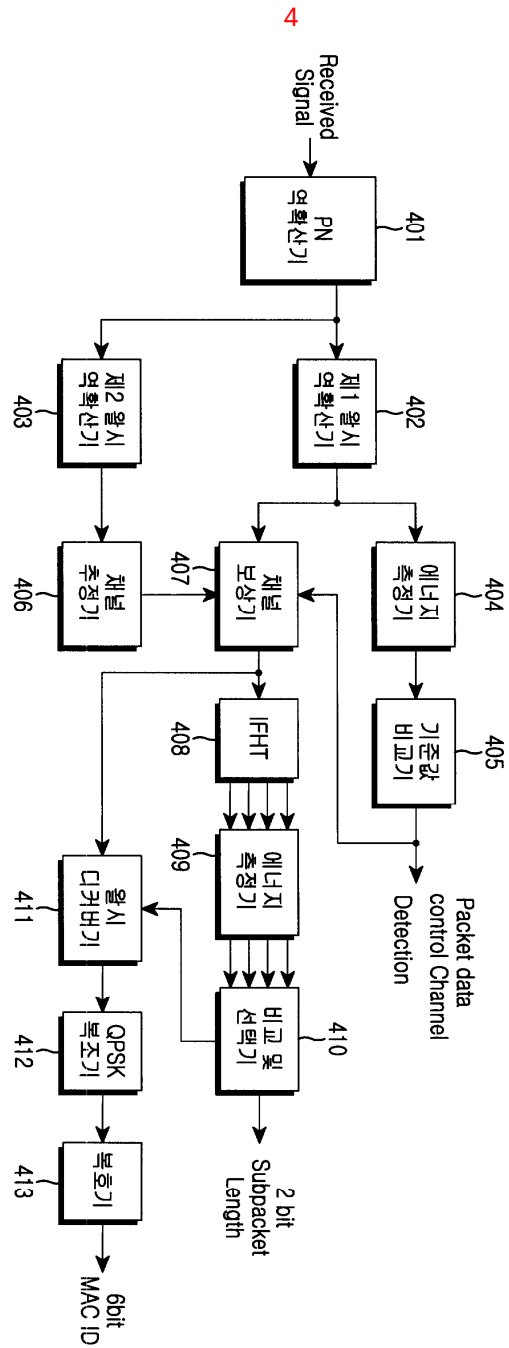
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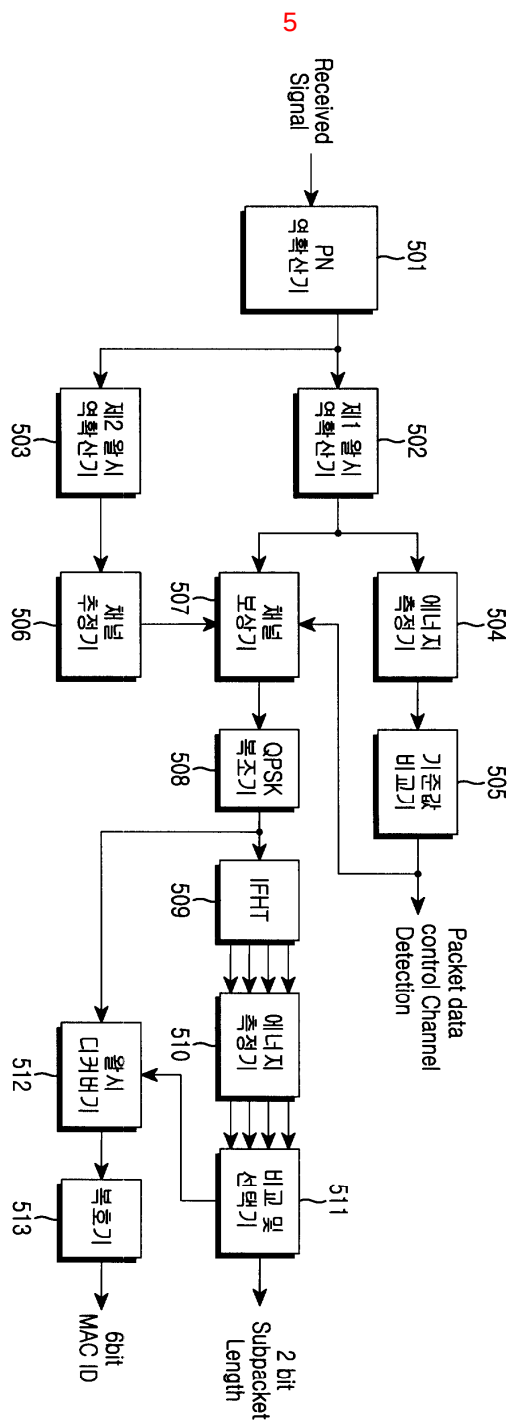
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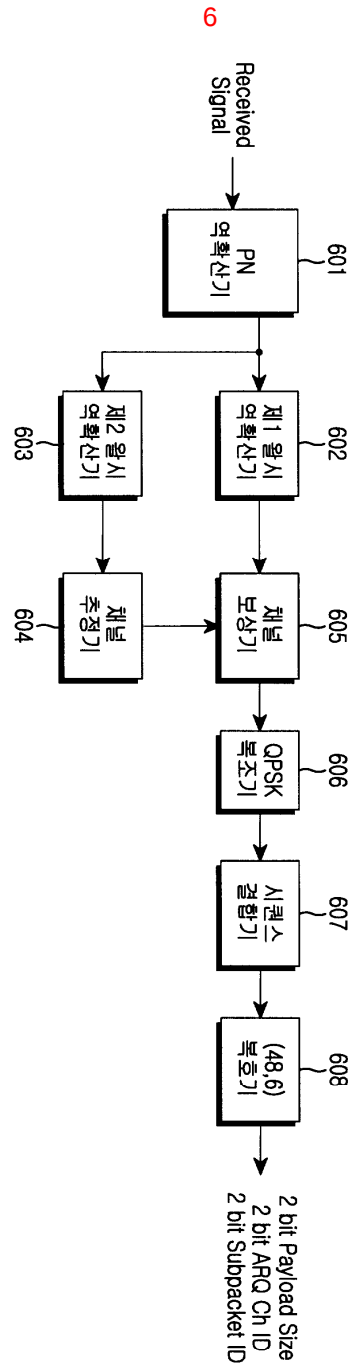
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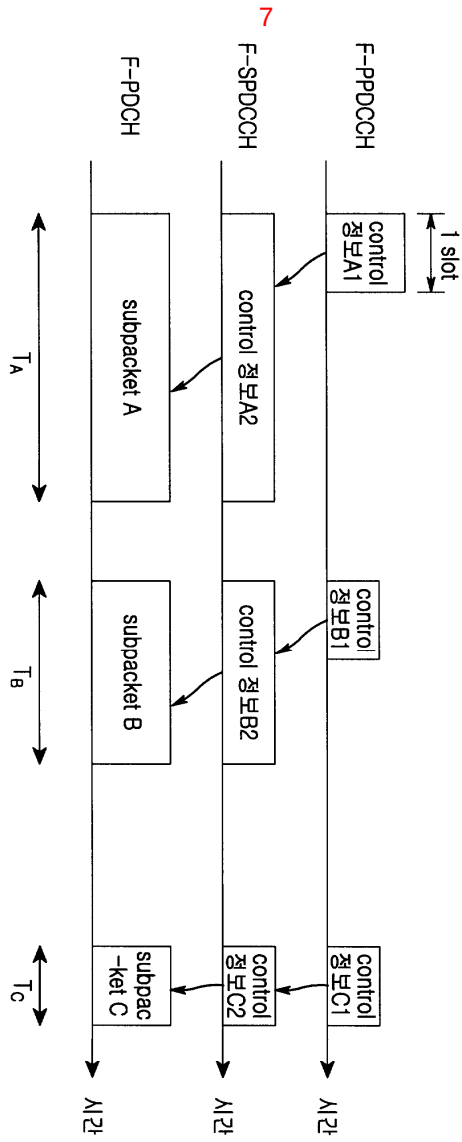
, ARQ

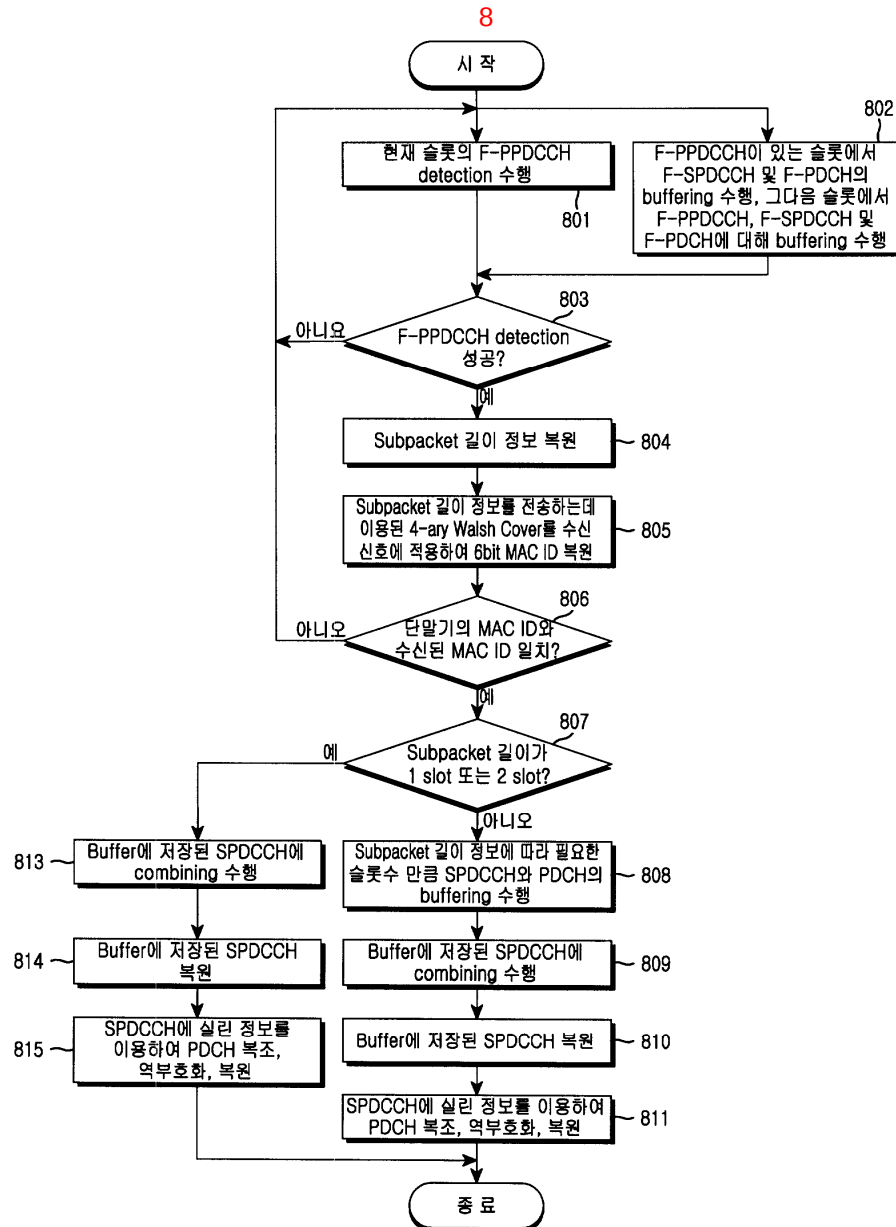




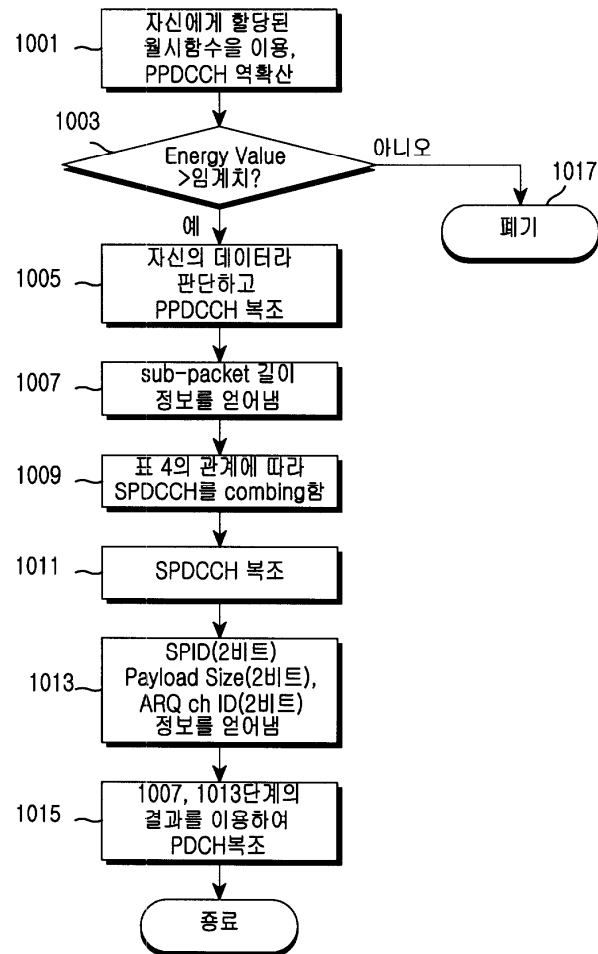




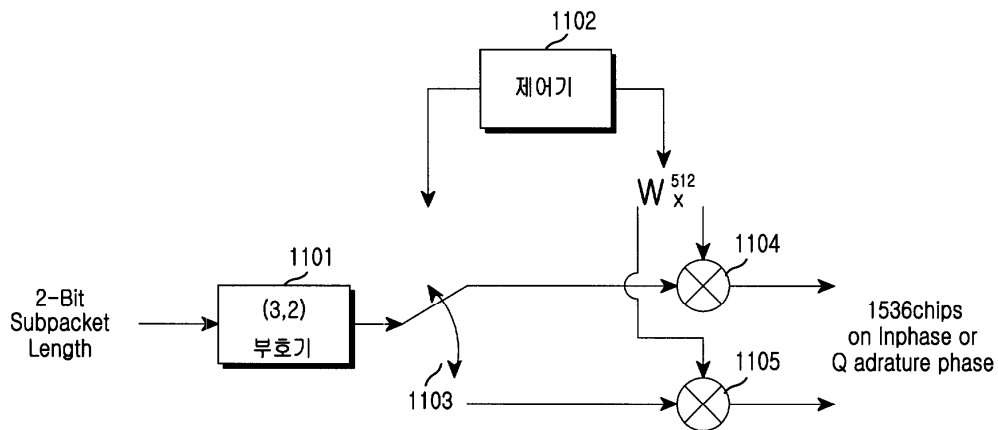


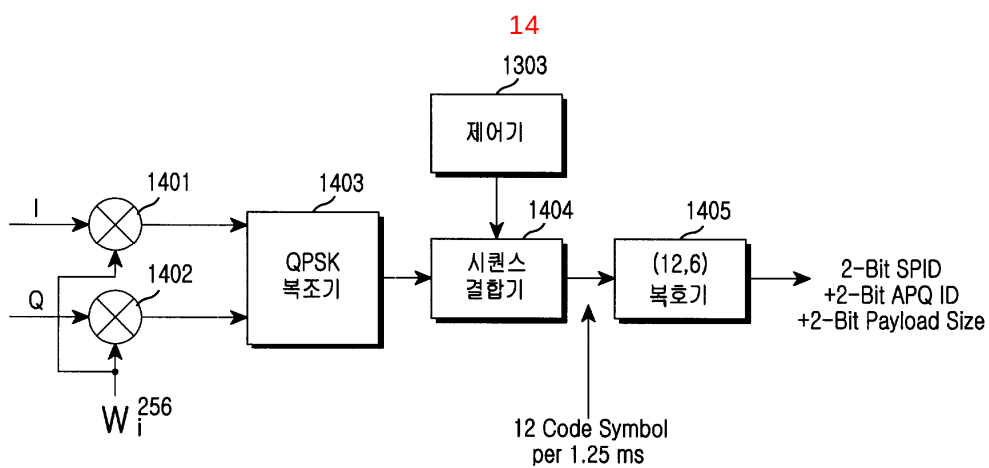
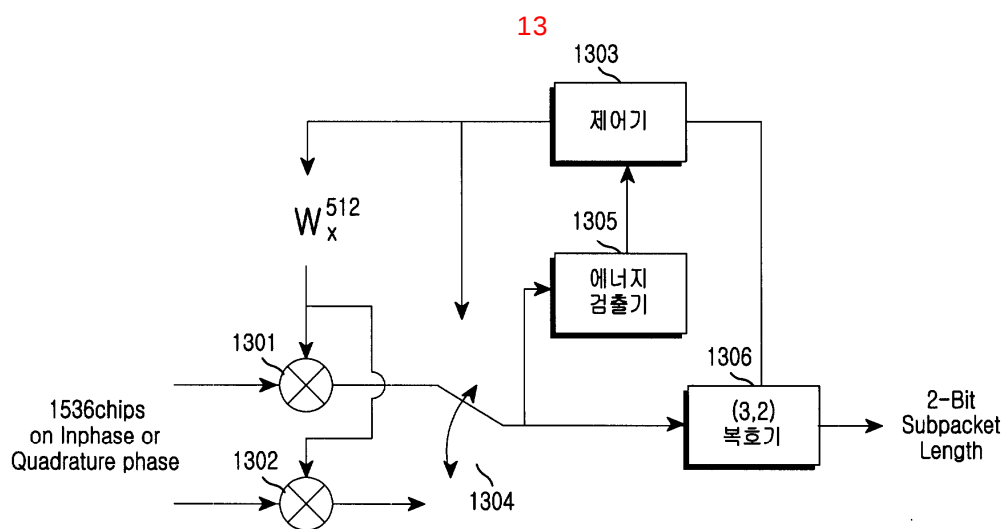
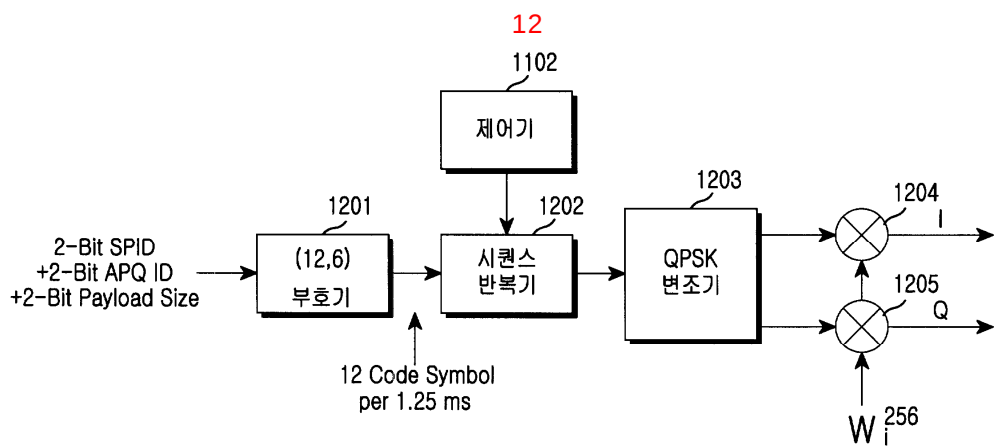


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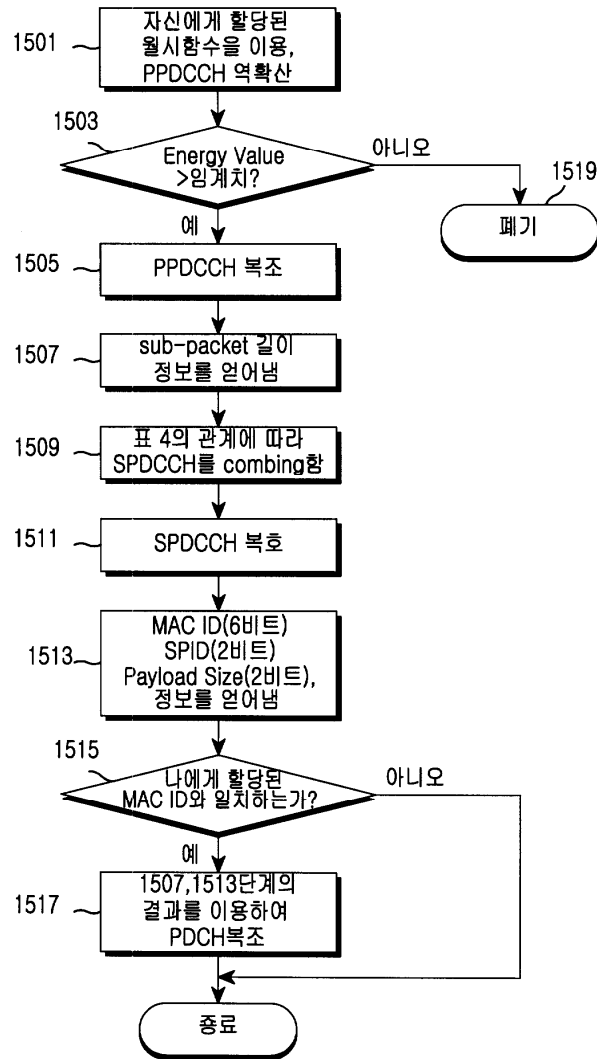


11





15



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