

(19)
(12)

(KR)
(A)

(51) 。 Int. Cl. ⁷
H04B 1/69

(11)
(43)

2001 - 0066406
2001 07 11

(21) 10 - 1999 - 0068121
(22) 1999 12 31

(71) 3 416

(72) 11 178 - 32

(74) :

(54)

(SIR) 가
,
1 2 (PN) PN PN
, 1 2 1
, 2
가 SIR SIR
2
, (), (), (SIR)

1
 2 (SIR)
 3
 4 SIR
 5 SIR
 6 4 5 SIR SIR

CDMA2000 (Code Division Multiple Access: " CDMA"
) (orthogonal code)
 (multi - path)가
 (interference)
 (finger) 가
 (SIR: Signal to Interference Ratio) (SNR(Signal to Noise Ra
 tio)) SIR
 SIR 가 SIR
 SIR 가
 SNR
 가 1
 1 1996 9 24 (USP Pat. No.) 5,559,790 , " Spread
 Spectrum Communication System and Transmission Power Control Method therefor" Fig. 2

1 SNR ()
 CDMA2000 (carrier)가
 (" (multi - carrier communication system)")

1
가

1

가, 1

SNR

1 PN 305
Multiplier) 310
tor) 311
(Measuring Unit) 316

2

가

306
(Square Unit) 312
S/N 316

2

W_N (Mult
(Accumula
S/N (Ratio)

가

306

1

(- 7dBm)
가

(- 18dBm > =)

SIR

가

(SIR)

(PN)
PN

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1 2

1

2

SIR

SIR

가

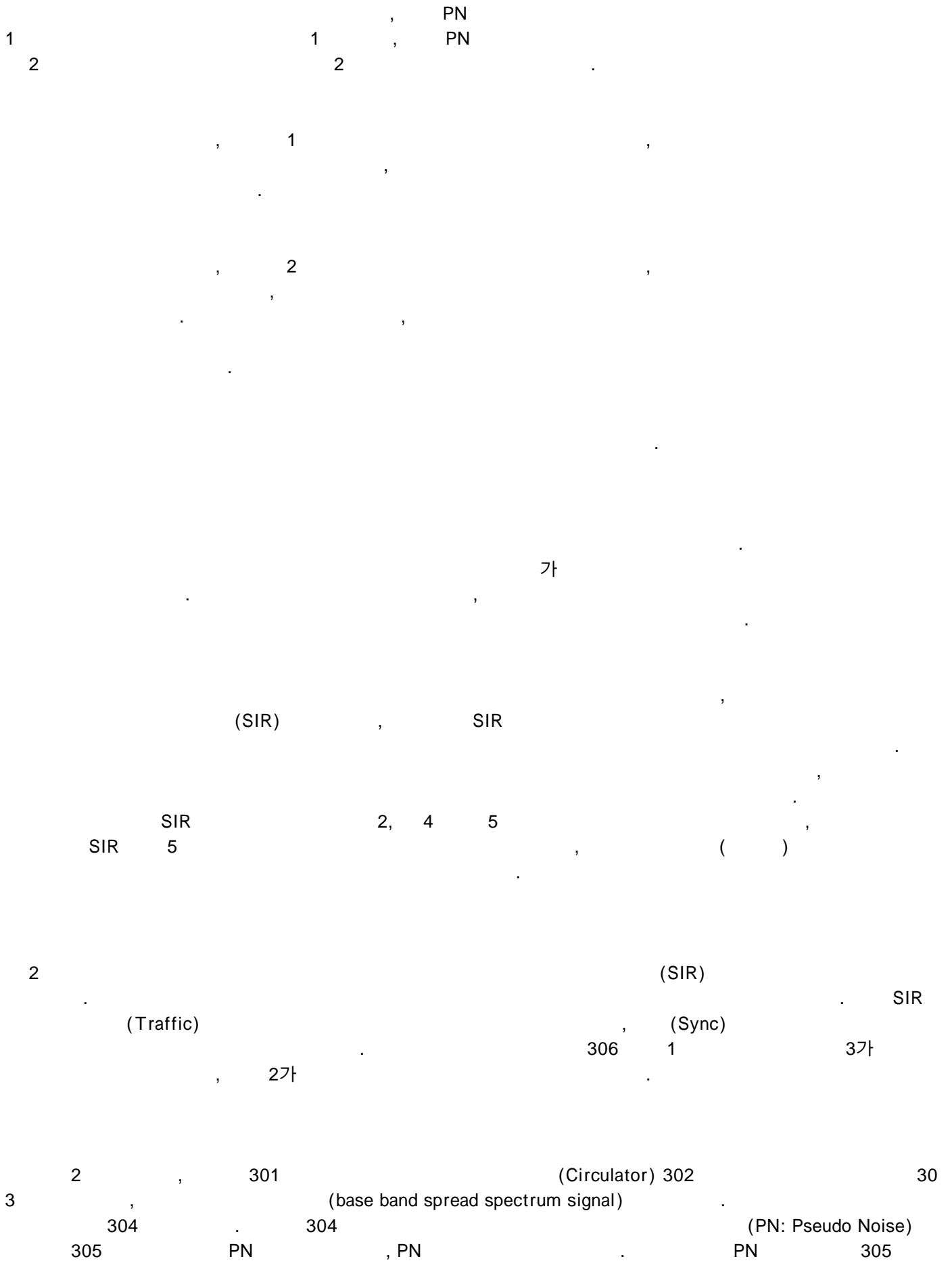
PN

PN

PN

PN

PN



PN PN PN , 304 PN 305

313 PN 307 PN 306 ,

6 PN (Walsh Code) 306 306 313,307 , 30

) 1() 2(

308 2 (PC: Power Control) 360

308 PC 360 PC 2 , PC

(PCG: Power Control Group)

PC 가 PC (Long Code) PC 2 PC 360 PC PC () PC 350 PC 308 PC

(Accumulator) 314 1 340 31

4 , 314 340 1

(PCG)

1 가

I,Q , I (arm) Q 4

가 " 0" ,

" 0" 가 .

() 가 .

1 SIR

309 308

SIR 370
Signal - to - Interface Ratio)

SIR 370
()

SIR

SIR(S
가

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3

(PCG: Power Control Group)

(RS: Rate Set) 1

1.25ms가

64

, 4 256

308
PC

PC

, PC

360

308

E

SIGNAL

314

314

$E_{INTERFERENCE}$

I Q

1>

(I - I', Q - Q'), n

<

1

$$\sum^{1_{PCG}} [(I-I')^2_n + (Q-Q')^2_n]$$

4

SIR

3

(Carrier) CARRIER1 CARRIER3

4

PN

401 403,411 413

PN

1 2 PN

2 301,

302

303

. PN

401 403

PN

1 PN

, PN

411 413

PN

2 PN

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421 423

1 PN

2

431 433

2 PN

441 443
 PC . . , 441 1
 PC 1
 442 2
 2 PC
 443 3
 PC 3
 441 443 2 308 , PC 360 ,
 350

451 453
 451 1
 452 2
 453 3
 1 2
 3
 451 453 2 314 , 340(,)

SIR 461 463
 SIR 461
 441 1
 1 SIR1 SIR 461
 2 SIR 462 451 1
 442
 SIR2 SIR 463 452 2 2
 443 3
 SIR 461 463 3 SIR3
 SIR 461 463 SIR 6 가

5 SIR
 5 SIR 4 SIR 가 (FIN
 GER)(; GROUP)

5 , 1 (1) PN 501 506 / 1
 PN 1 2 PN . PN 2
 301, 302 303 . PN 501 5
 03 / 1 PN 1 PN , PN
 504 506 / 1 PN 2 PN
 1 511 513 1 PN
 2 514 516 2 PN

521 523 1

1 / 1 PC / 1 521 1
 / 1 PC 522 2 / 1
 523 3 / 1 PC 521 523 PC
 3 / 1 2
 308 , PC 360 , 350

524 526 1
 / 1 524 1 / 1
 2 / 1 1 / 1 525
 2 / 1 2 / 1
 3 / 1 526 3 / 1
 314 , 340(,) 524 526 2

2 (2) PN 531 536 / 2 PN
 1 2 PN 301,
 302 303 PN 531 533 / 2
 PN 1 PN , PN 534 536 /
 2 PN 1
 541 543 1 PN 2 PN
 2 544 546 2 PN

551 553 2
 PC / 2 551 1
 1 / 2 PC 552 2 / 2
 / 2 PC 2 / 2 PC
 553 3 / 3 551 553 PC
 3 / 2 2
 308 , PC 360 , 350

554 556 2
 / 2 554 1 / 2
 2 / 2 1 / 2 555
 2 / 2 2 / 2
 3 / 2 556 3 / 2
 554 556 2

314 , 340(,) .

3 (3) PN 561 566 / 3 PN
 1 2 PN
 302 303 . PN 2 301,
 PN 1 PN , PN 561 563 / 3
 3 PN 2 PN , 564 566 /
 571 573 1 PN 1
 2 574 576 2 PN

581 583 3
 PC / 3 PC 581 1
 1 / 3
 / 3 582 2 / 3
 PC 2 / 3
 583 3 / 3 PC 581 583 PC
 3 / 3 2
 308 , PC 360 , 350

584 586 3
 / 3 584 1 / 3
 2 / 3 1 / 3 585
 3 / 3 2 / 3
 586 3 / 3
 314 , 340(,) 584 586 2

SIR 591 599
 / SIR , SIR 591 1 /
 1 1 / 1 SIR , SIR 592 1 /
 2 1 / 2 SIR , SIR 593 1 /
 3 1 / 3 SIR .

SIR 594 2 / 1 2 / 1 SIR
 , SIR 595 2 / 2 2 / 2 SIR
 , SIR 596 2 / 3 2 / 3 SIR

SIR	597	3	/	1		3	/	1	SIR
, SIR	598	3	/	2		3	/	2	SIR
, SIR	599	3	/	3		3	/	3	SIR

가	601	SIR	591	593		1	SIR	가
			.가	602	SIR	594	596	
2		SIR	가			.가	603	SIR
597	599			3	SIR	가		

6 4 5 SIR SIR

6	,	611	613	SIR	SIR_THD
		620		SIR	SIR_THDD
	" 1"			" 0"	611 613
가	620	(time multiplexing)	가	()
(Reverse Pilot Channel)		(MPX: Multiplexer) 318	1		(Encoder) 317
(fading)			가		가

, 6 2 SIR , 6

가 CDMA2000

SIR 가 가

(57)

1.

(SIR)

(PN)

PN

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1 2 PN ;

1 PN
1 ;

2 2 PN
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PN PN ,

PN PN

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14.

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, 2 PN 2 ;

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/ (SIR) ;

가 ; / SIR 가 SIR

SIR , ;

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PN PN ,
PN PN

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16 18 ,

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(PN) PN (a) ,
PN (b) , 1 2
1 , (c) ,

2
(d) ,

SIR (e) ,

f) SIR , (

21.

20 , (a) ,

PN ,

PN PN .

22.

20 , (b) ,

PN 1 ,

PN 2 .

23.

20 , (c) ,

1 ,

24.

20 , (d) ,

2 ,

25.

24 ,

26.

23 24 , (c) (d) .

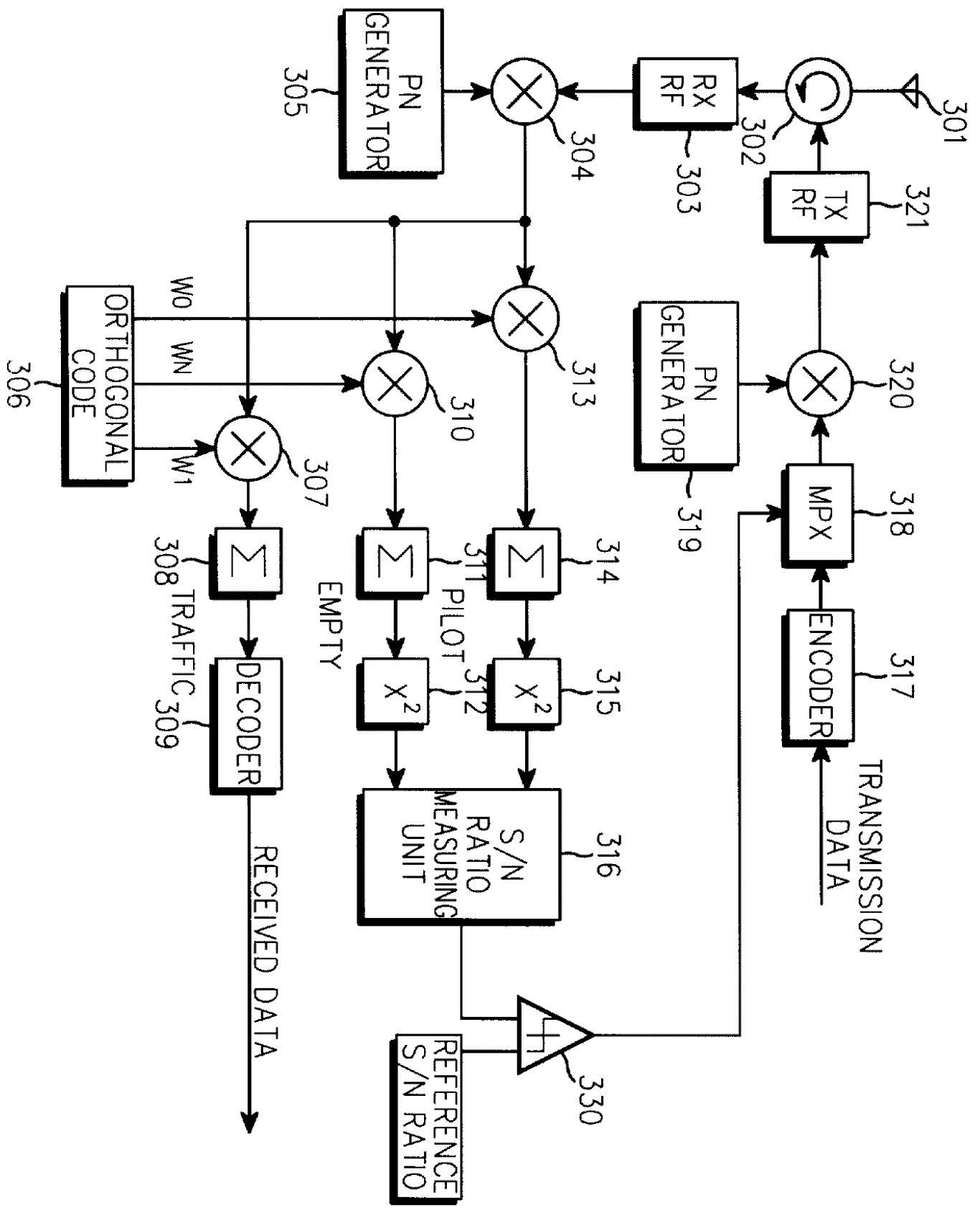
27.

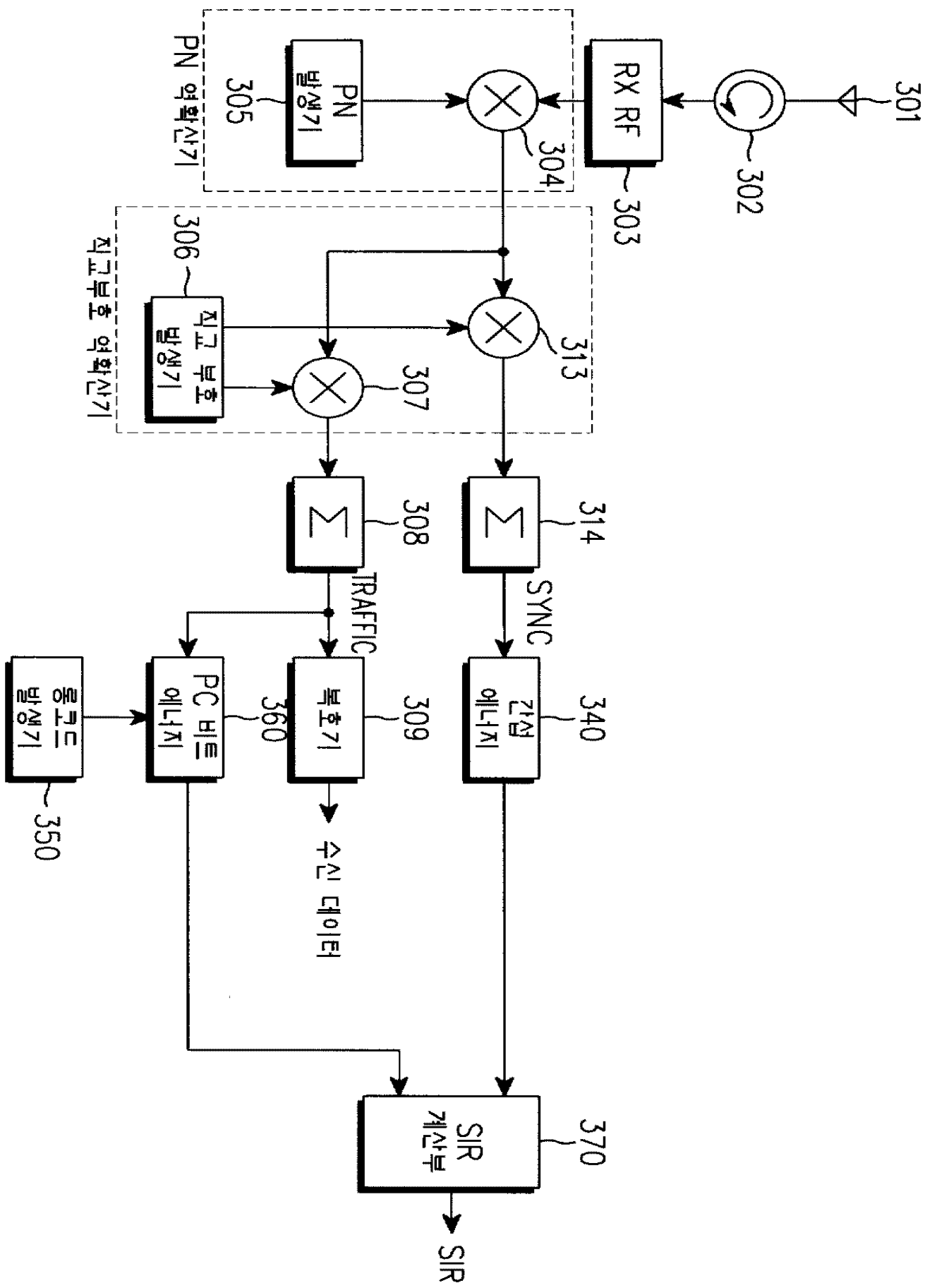
20 25 , (a) (f)

28.

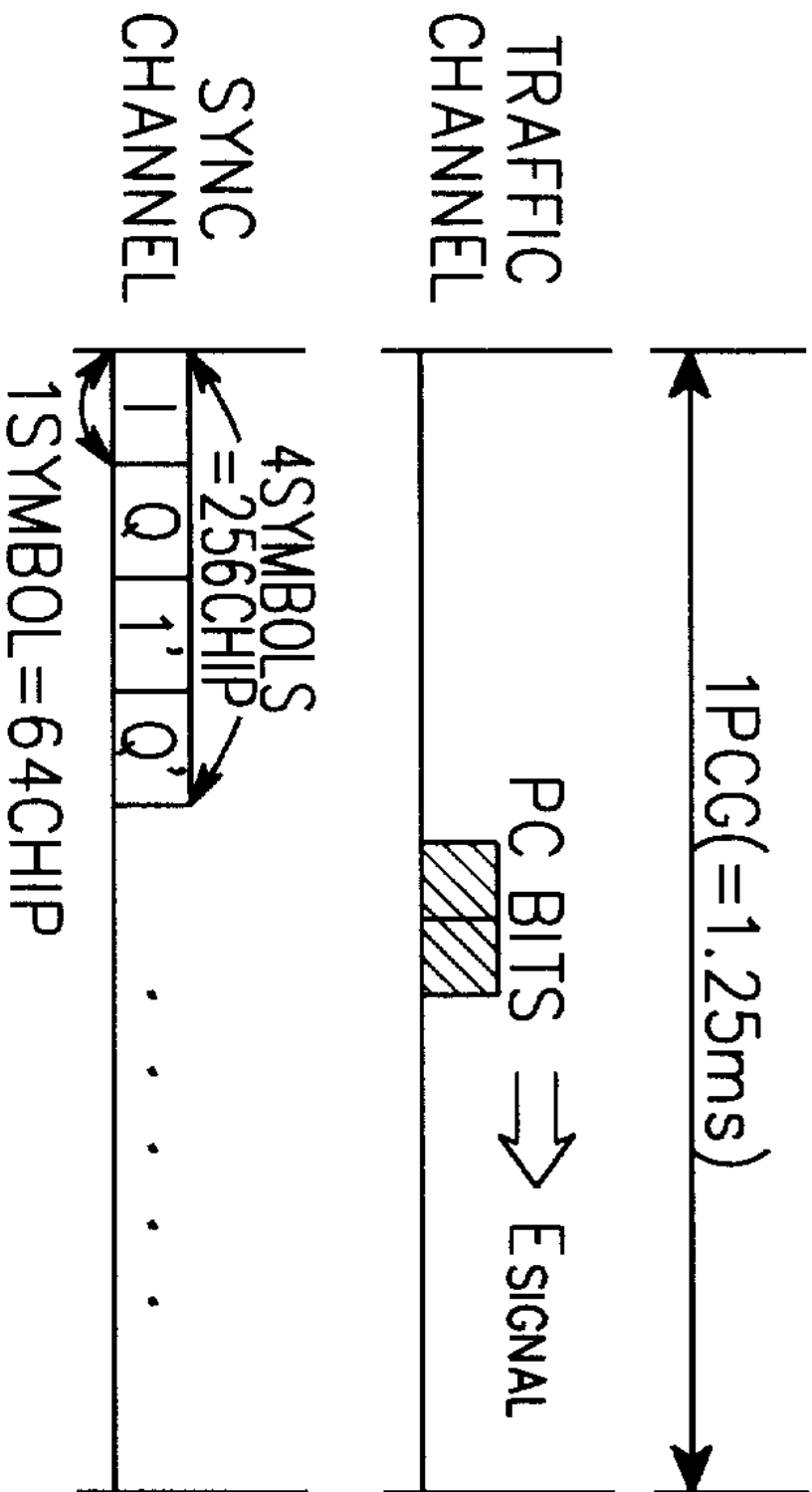
20 25 , (a) (f) /

1



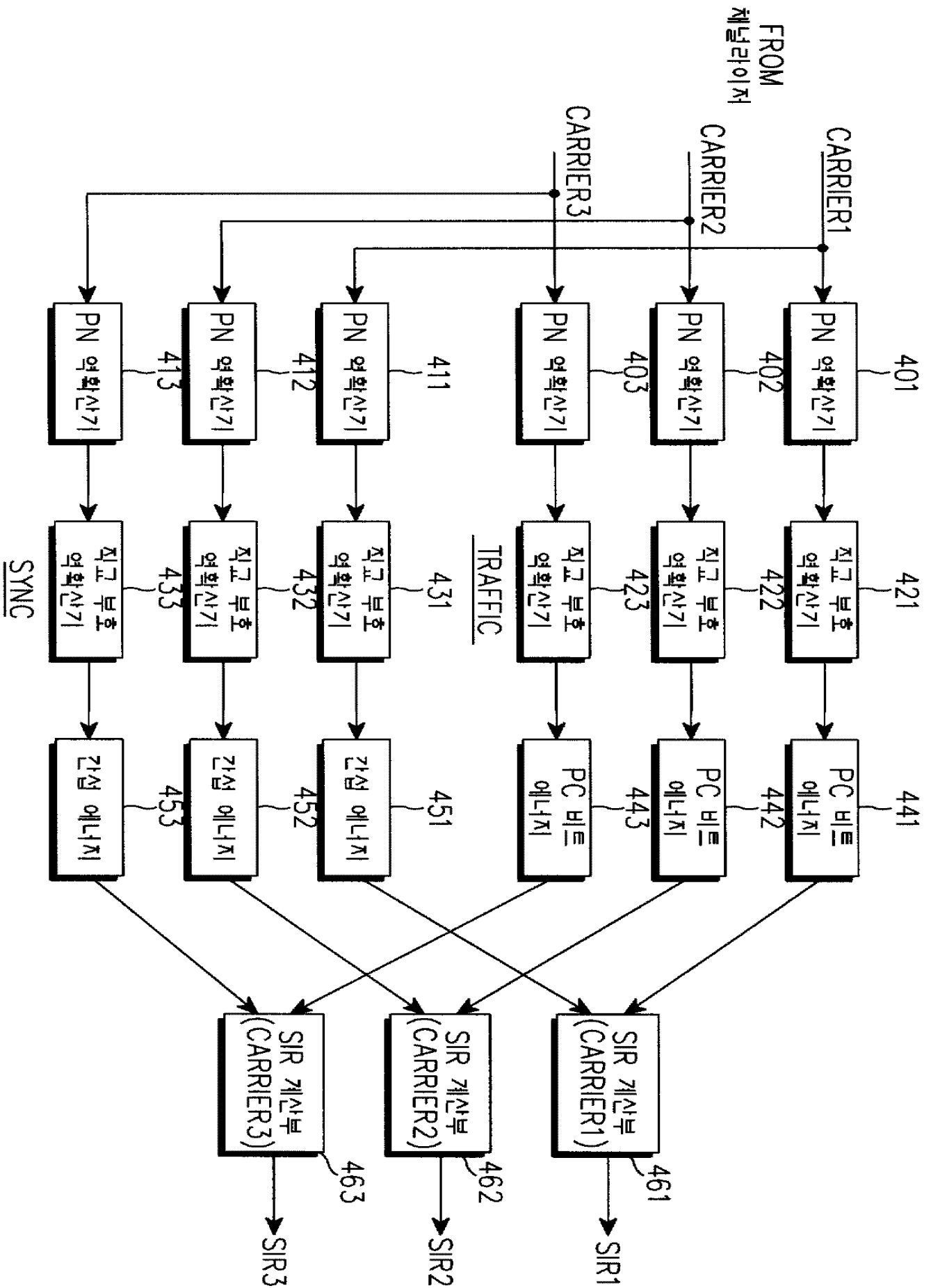


3

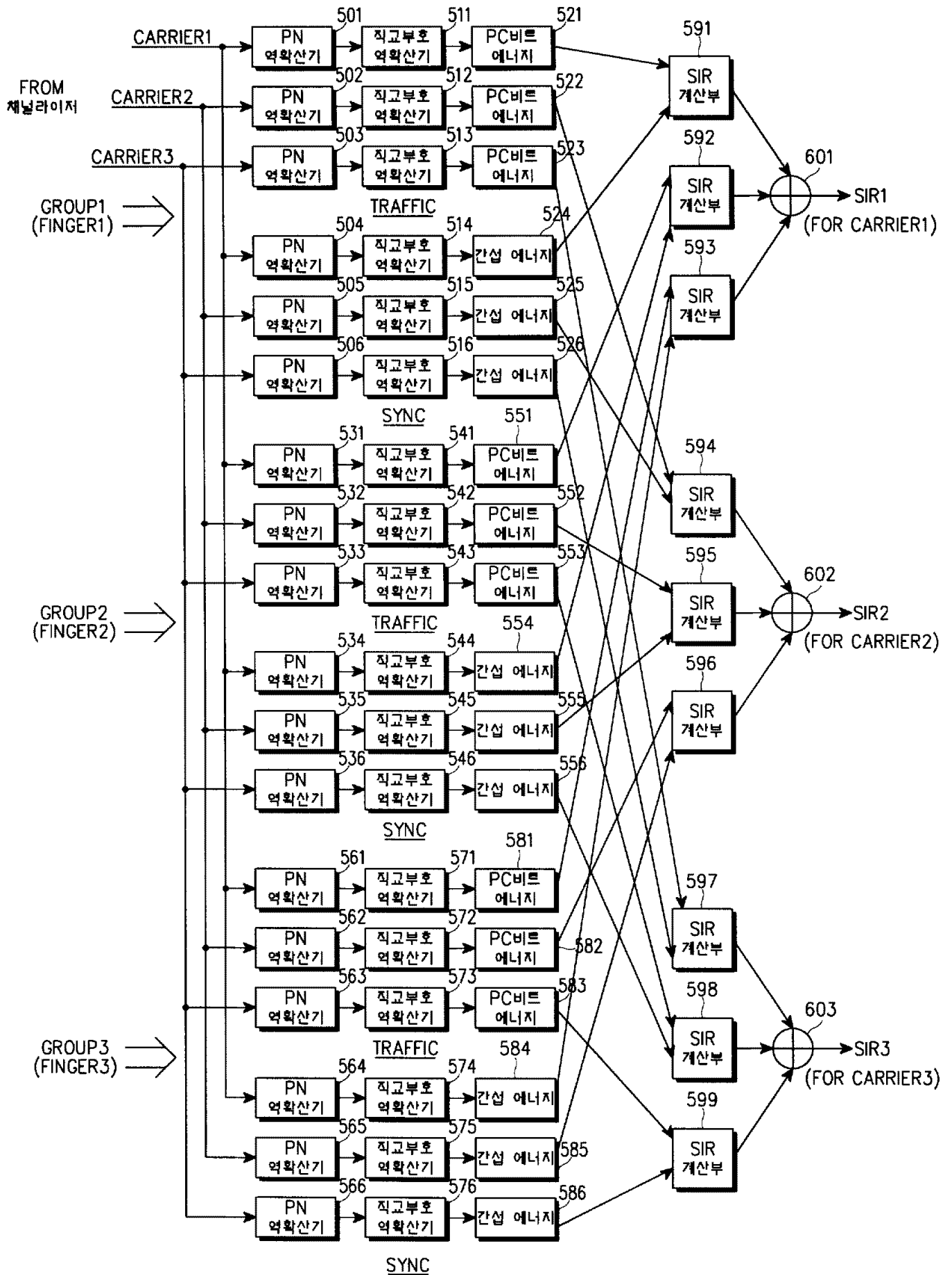


$$\sum_{n=1}^{1PCG} [(I-I')^2_n + (Q-Q')^2_n] \Rightarrow E_{INTERFERENCE}$$

(여기서, $I \neq I'$, $Q = Q'$, n 은 심볼의 수)



5



6

