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2002 06 29(21) 10 - 2000 - 0080198
(22) 2000 12 22

(71)

134

(72)

1 25 804

(74)

:

(54)

iple Access) , CDMA (CDMA : Code Division Mult ,

,

,

DMA . C

CDMA , 가

가 , 가 가 가 가

CDMA(Code Division Multiple Access), (Fading)

1 CDMA

2 CDMA BPSK Mr

3 CDMA

4 CDMA outage

< >

100 : 200 :

210 : 220 :

iple Access) , CDMA (CDMA : Code Division Mult

DMA C

가 가 ?'

(TDMA : Time Division Multiple Access) , 가 (Frequency Division

Multiple Access) (Code Division Multiple Access)

(Time Slot) ,

/ .

가 . TDMA CDMA , 가

TDMA CDMA

TDMA

가 () 1 ()

, TDMA GSM(Group Special Mobile) , IS - 54 PDC(Personal Digital Ce
llular) GSM ,

82 CEP
T(Conference of European Postal and Telecommunication Administrations) " Group Special Mobil
e" 가 GSM (Roming), FA
X, E - mail, File , 가 가

GSM 8 , 8
ing) Duplex 가 , (Slot Stagger
(Interference Diversity) , (Frequency Hopping)
(Discontinuous Transmission)

CDMA . CDMA 1960
ping) CDMA FS(Frequency Ho

CDMA QUALCOMM 가 IS - 95

CDMA 가 QUALCOMM 가 91

94 4 . ,

CDMA (CAI : Common Air Interface) IS - 95

CDMA CAI IS - 95 가 9.6kb

/s . 128 1.2288Mchips/s ,

(1/2 (Convolution Coding) , 64 (Walsh F

unction Sequence) 가 가 .

5 (Pseudo Random Sequence) (Scramble) 21

가 .

(Pilot) , (Traffic)

가 ,

1/3 , 6 64 (Orthogon

al Walsh Functions) (Mapping) . 307.2 kchip/s

가 1.2288 Mchips/s 4 . 1/3 Walsh

(Mapping)

(near - far problem)

(open - loop control) (closed - loop control)가 , 80

0b/s , Rake receiver가 .

가, , (Fading Margin) , (Forward Error Correction) , 가

RF

3 가 가 .

3 , ,

TDMA

CDMA

(User) (Base Station) CDMA
(Orthogonal Sequence)

가 가

1 CDMA

(100) (User)(200) (200)
(100)(Base Station)
(100) (200) (SIR:signal energy to int
erference ratio) Beacon

(100) (200) (Orthogonal Sequence) Mr Mr (Orthogona
l Sequences) (200)
Mr (200) (100) 가 (200) (200)
가 Mr Mu 가 Mt
가 Mr Mr
Mr Mr

CDMA (210) (200) (100) Mr
(Orthogonal Sequence) (210)

가

(200) (100)
k Mr

Mr 가 $\log_2 Mr$
k $\log_2 Mr$

QPSK $k+2$ 가 QPSK $\frac{k}{2}$, k QPSK $k+2$

2 가 $k/2+1$ 가 .

BPSK k k

$+1$ 가 .

가

, Mr 가 .

2 CDMA BPSK Mr

.

BPSK $k+1$. 2

Mr 가

, Mr 가 가 .

, 2 ,

, Mr CDMA

, 2 ,

Mr CDMA

CDMA

BER 10^{-6} CDMA Mr=8, 16, 32, 64, 128 2.3dB,

3.1dB, 3.7dB, 4.2dB, 4.5dB .

(200) Mr ,

((200) Mr) Fm , alpha

If (alpha = Fm) then Mr=1;

If (Fm alpha < = Fm + G8) then Mr=8;

If(Fm+G8 alpha < = Fm+G16) then Mr=16;

If(Fm+16 alpha < = Fm+G32) then Mr=32;

If(Fm+G32 = alpha) then Mr=64;

, Gx 2 .

CDMA

.

3 CDMA

.

(200) (100) (:S1). (100) (200)

(200) (:S2).

, (100) 가 , (:S3). , 가 가
 (:S4), Mr (:S5) Mr
 (200) (:S6).

(200) (100)
 (:S7).

, (200) (200) ,
 (100) .

(200) (100)
 (:k) (:S8).

(k)가 k Mr
 (:S9) (:S10).

, (BPSK, QPSK) 가 (:
 S11).

, (220) k .
 ,

4 CDMA(BPSK)
 outage .

outage (Fade Margin) 가

.

4 CDMA outage .

, 가
 , 가
 , .

, CDMA
 , CDMA , 가
 가 가 가 가 가

(57)

1.

(User) (:Base Station) (CDMA)

,

가

;

Mr (Orthogonal Sequences) ;

;

Mr ,

CDMA .

2.

1 , ,

(Orthogonal Sequence) (k)

;

Mr

;

;

가 ;

, k
CDMA .

3.

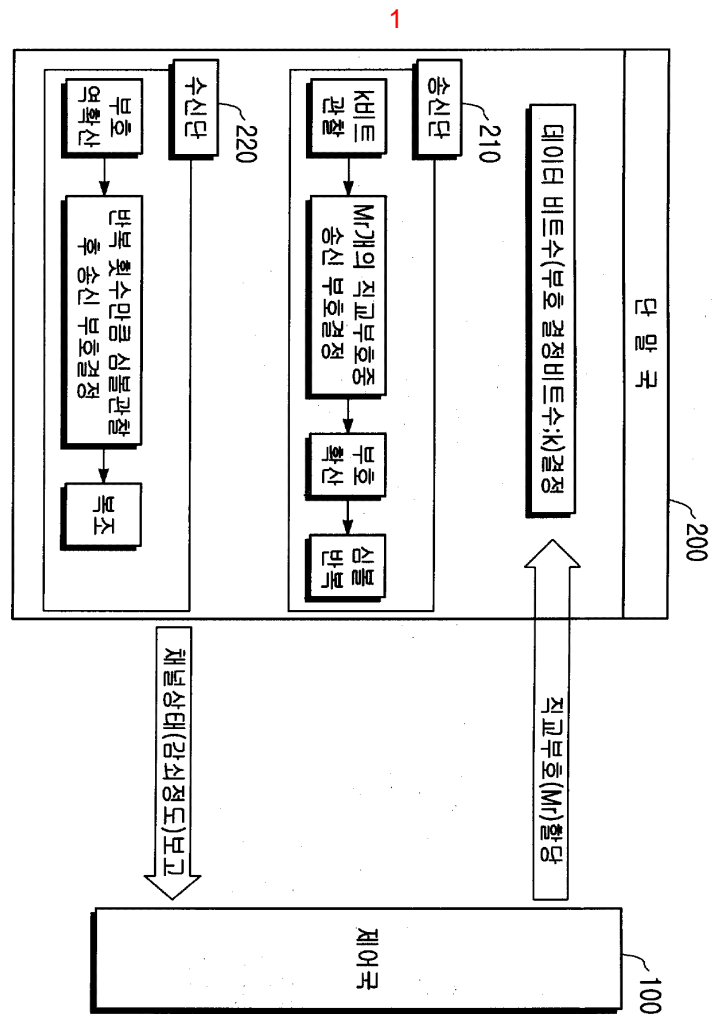
2 , (k) Mr
CDMA .

4.

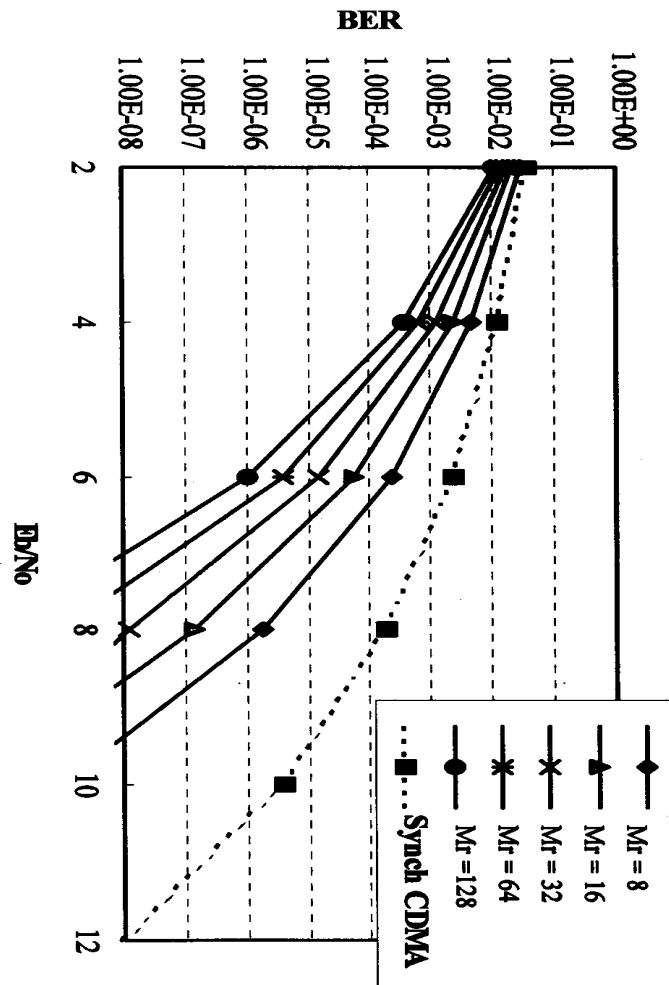
2 , (PSK)
CDMA .

5.

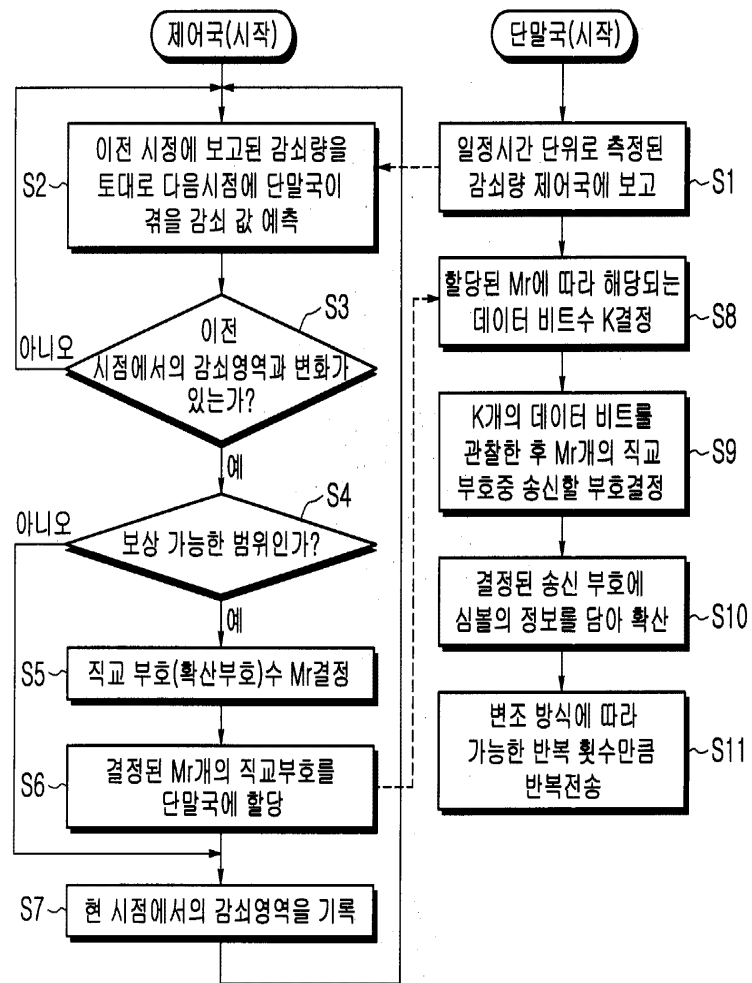
1 , Mr CDMA 가



2



3



4

