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(22) 2002 10 08

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(72) 1 87-70 24/3

(74)
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(54)

,
가 ,
가 ,

4

, VSB, QAM, OQAM,

1 ATSC ,

2 1 ,

3 ATSC ,

4 ,

5 4 ,

6 ADTB-T

7 5

8 CDTB-T

* *
 10, 100 : 20, 110 : FEC
 30, 150 : 120 : PN
 130 : 140 :

(Federal Communications Commission : FCC) 1996 12 24 , ATSC (Advanced T
 elevision Systems Committee) TV (Digital Television Standard) TV
 ATSC 가 ,

ATSC , MPEG(Moving Picture Experts Group)-2 (ISO/IEC IS 13818-2)
 (Digital Audio Compression)(AC-3) Dolby
 2 (ISO/IEC IS 13818-1) 가 MPEG-

8-VSB(Vestigial Side Band) . VSB TV
 6MHz 19.39 Mbps
 가 , NTSC(National Television Standards Committee)

(Reed-Solomon : RS) (Trellis)

ATSC TV (VSB) 6MHz
 가 가 ,
 8-VSB 가 VSB 가 가

1 ATSC
 (50), RF (60) (10), FEC(Forward Error Correction) (20), (mux)(30), (40),
 eaver)(23), (20) RS (Reed-Solomon encoder)(21), (interl
 (trellis encoder)(25)

111111b (10) 가 (data randomizer) , 00000000b 111
 (10) , ,

RS (21) 가 FEC . FEC
 , RS (21) MPEG-II , 187 20 가 . 가 20
 , 187 20
 가 10 , 가 가
 , 가 가
 (23) 가 ()

(21) (25) RS (21) FEC . MPEG-II RS
 al Code) , (25) (25) 8 4 2 , (Convolution
 가 2 , 3 2 가 8-VSB (3 = 8) , 3
 (25) 2 3 8-VSB 2/3 (r
 ate coder)

(25) , (30)
 y Learning Or Teaching) (40) 가 ATSC (PILOT : Programmed Inquir
 DC (1.25V)가 8-VSB 가
 ATSC 가

(50) (40) 8-VSB . RF (60)
 RF(Radio Frequency :) ,

ATSC MPEG-II 187 +20 207
 828 (=207×4), 8 .

I 가 4 (1) MPEG-I
 가 가 가

(segment sync :)가 2
 , 63 (Pseudo
 Noise sequence : PN) , 24 , 92 , 12 (precod
 e)
 , PN () , (30)

3 ATSC , ATSC (field sync) , ATSC 313
 ATSC 가 . ATSC

ATSC 24.2msec NTSC (Vertical Interval) (NTSC =16.
 7msec) 가

(burst noise) , FEC

(walsh code)

가

가

가 2^N (N)

가

4 (120), (130), (140), (150), (160), (170), RF (100), FEC (110), PN (115), FEC (110) RS (Reed-Solomon encoder)(111), (interleaver)(113),

1111111b (100) 가 (data randomizer) , 00000000b 11 (10)

FEC (110) (S501). , FEC (110) RS (Reed-Solomon encoder)(111), (interleaver)(113), (115) ATSC)

PN (120) PN (120) 255, 511, 1023, 2047, 81 (150)

(130) 가 (S503). , 가 가 (113)

(113)

가 2^N (N)

(140) PN (120) (130) (XOR)

(S505). (140)

(115) (150) (140) (150)

S507). (160) 가

(170) (160)

가

(Phase Shift Keying : PSK) . 가 BPSK(Binar

y Phase Shift Keying) 1 0 1 180 PSK

QPSK(Quadrature Phase Shift Keying) 90 4 , 2

. cos BPSK , sin BPSK . 8-PSK 3 8

45 가 . 8-PSK 가 가 BPSK 3 가

가

(Amplitude Shift Keying : ASK) . ASK

가 가

M(Amplitude Modulation) , 3 ASK A

가 , 4 16 가 . 8

ASK

APSK(Amplitude Phase Shift Keying) . AP

SK re Amplitude Modulation) , 16-QAM BPSK 4 QAM(Quadratu

가 가

ASK

VSB 가 , 3 8 AS

K , VSB 8-VSB 가 . , 8-VSB 가 8

VSB

RF (180) RF

HDTV(High Definition Television) TEEG(Technical Expert Executive Group)

가 가 ADTB-T(Advanced D

igital Television Broadcasting- Terrestrial) . ADTB-T ATSC , AD

TB-T / , OQAM(Offset Quadrate Amplitude Modulation)

ATSC

6 ADTB-T , 7 5

. , 8 , 511 253

32 , ADTB-T , ADTB-T

13 , 26 , 52 가 . ADTB-T ATSC

ADTB-T , ADTB-T ATSC , AD

TB-T FEC , ATSC , AD

(The Academy of Broadcasting Science : ABS)

CDTB-T(Chinese Digital Television Broadcasting-Terrestrial)

. CDTB-T

QAM

QPSK

, CDTB-T

QPSK

16QAM

64QAM

256QAM

8 CDTB-T

1,

2,
가

, CDTB-T
(tail symbol)

(control bits)

511
(remaining bits)가

가

CDTB-T

FEC

가 FEC

가

가

가

가가

(57)

1.

가

;

;

;

;

2.

1

3.

2

3 4.

4 5.

가 2^N (N)

5 6.

/ CDTB-T

가

ADTB-T

7.

가

7 8.

8 9.

9 10.

10 11.

가 2^N (N)

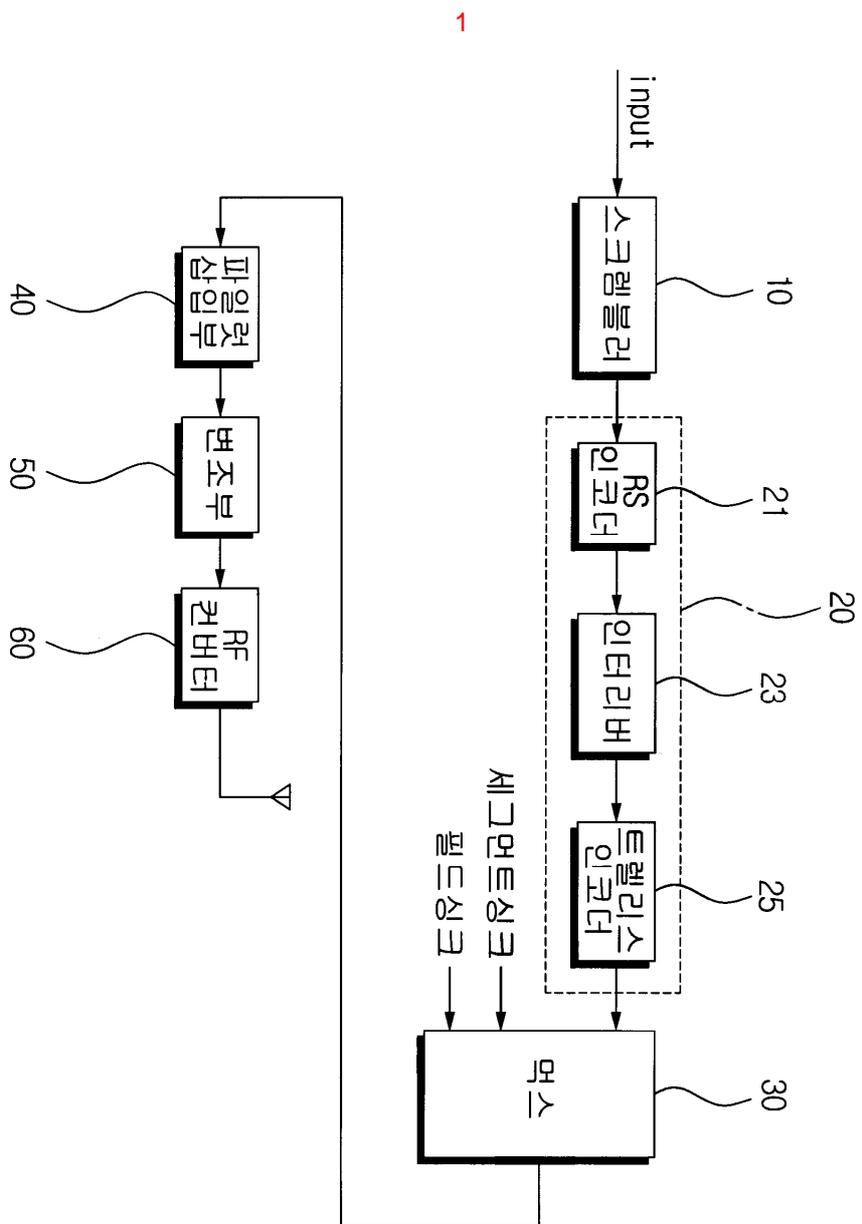
11 12.

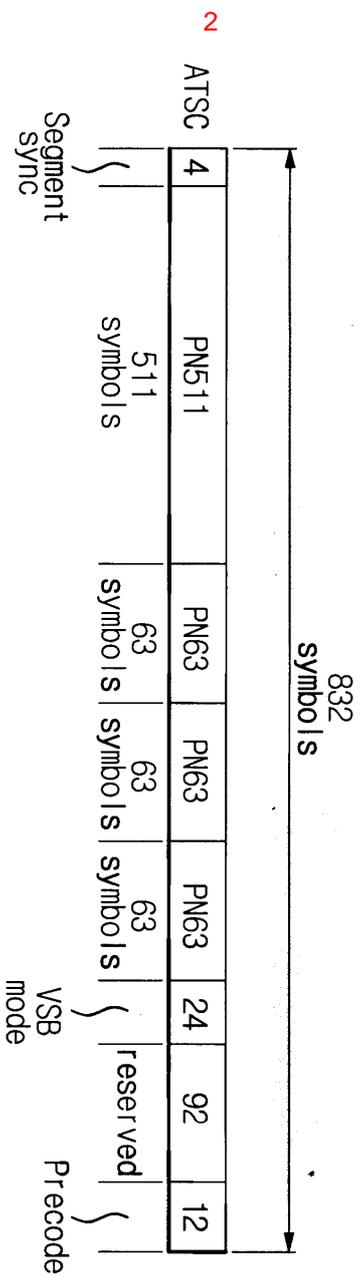
ADTB-T

/

CDTB-T

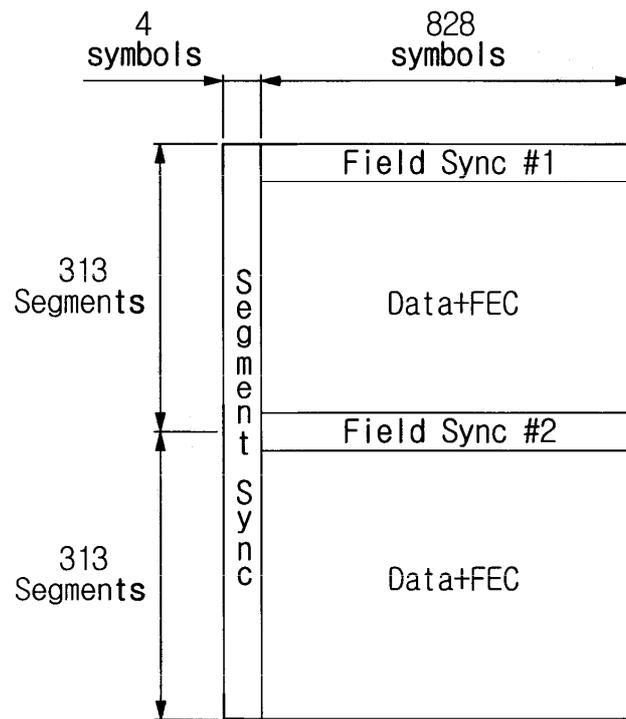
가

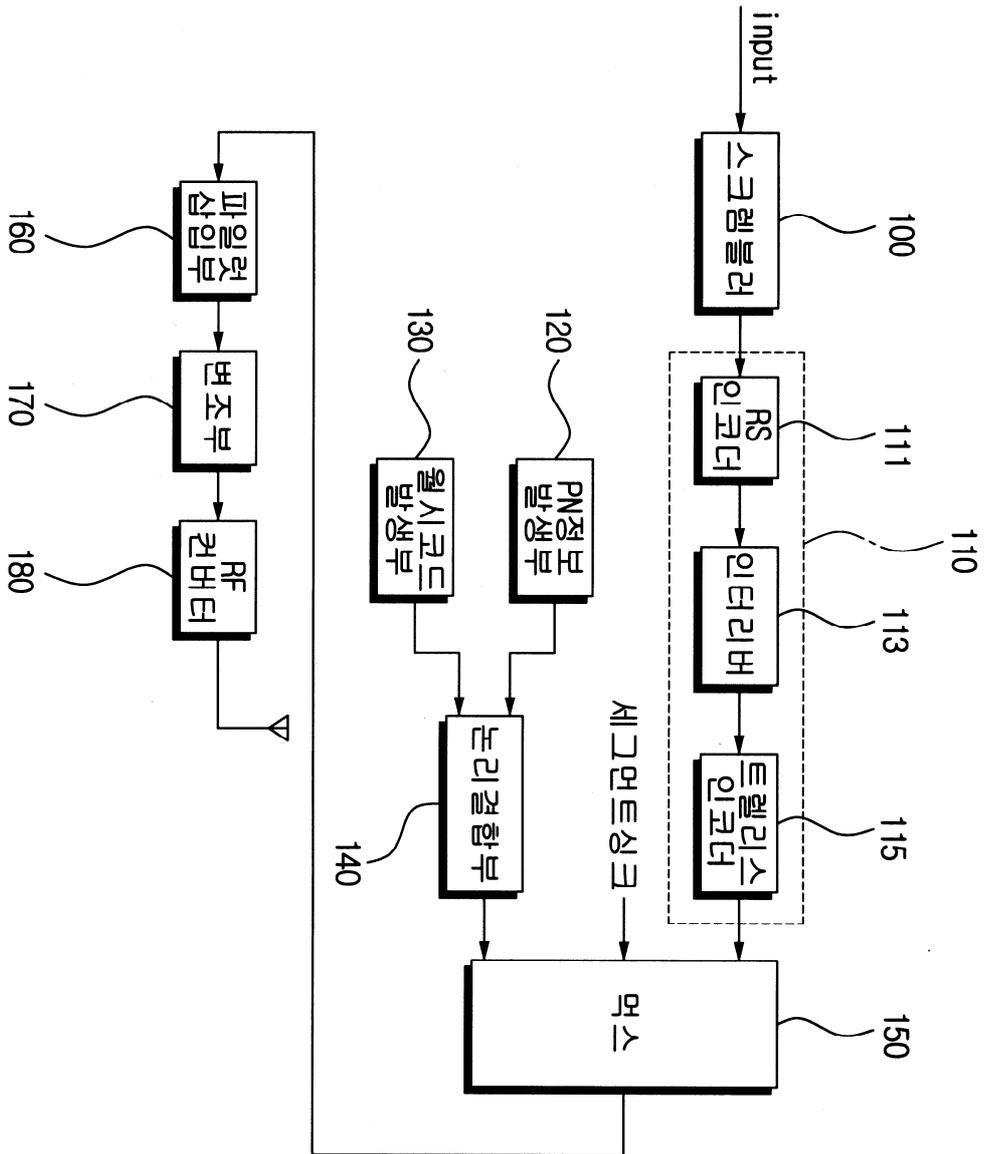




2

3





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