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(71) 가 가

10 1

(72)

10 1 가 가

(74)

:

(54)

가 CPU(10) RAM(11)
(33)가

(30)

가 CPU(10)가 (31)
(32)

(32)

(30)

(33)

가 (32)
(30)
CPU(10)
(32)

(30)

가

(33)

가 . ,
 10 , CPU(cent
 ral processing unit)(110) , MIDI(musical instrument digital interface) , SMAF(synthetic music mobil
 e application format)
 (115) RAM(random access memory)(111)
 (115) RAM(111)
 (134) (115) , (130) ,
 (133) (130) , RAM(111)

RAM(111) , CPU(110)가
 (130) CPU(110)가 RAM(111)
 (130) (133) ,
 (130) RAM(111) ()

RAM(111) CPU(110)가 (115)
 8 (130) RAM (115)
 , 8 (133)가 1
 , 8 1 RAM (133)가 1
 1 8 (130) (133)

(130) RAM 가 , RAM
 가 (115) CPU(110)가 RAM(111)
 가 (115) CPU(110)

(130) (130)
 (130) 8
 (130) (130) RAM
 (130) 8 (130)

가

가

가,

가

가

가

가

가

1

2 1

3 2

4 3 RAM

5 3

6 2

7 6 S2

8 6 S3

9 6 S4

10

1

1 (2) (1) (25) (13) CPU(central p

rocessing unit)(10) , (1) ()
 , CPU(10) , (2)
 (15) . RAM(random access memory)(11) , CPU(10)
 ROM(read only memory)(12) , CPU(10)
 (13) , (25) , (2) (/)(14)
 (25) (13) (14) , (14) ,
 (21) / , CELP(Code Excited LPC) ADPCM(PCM
) / (15) , (14)
 (22) (23) 가 , (22) 가 .
 MIDI(Musical Instrument Digital Interface) SMAF(Synth
 etic Music Mobile Application Format) (15)가,
 (15) CPU(10)가 RAM(11) (15) RAM,
 RAM(11) , RAM (15) , G
 M(General MIDI) 1 1
 (I/F)(16) , (20)
 (17) (1) '0' '9'
 (18) , (1)
 (19) , (24)
 , 1 가 2 , 2 ,
 (22) (23)가 (34) , (22) (23)
 , (24) 2 , CPU(10), (15) RAM(11) (24)
 2 , RAM(11) GM GM , CPU(10)
 RAM(11) (30) CPU(10)가 RAM(11) (30) 가
 (a) , (30) , CPU(10) , (13) 가
 (b)가 (30) (c) (c)
 (write)(b)가 (30) (a) , (30) (30)
 (31) , (d) , RAM(11) (a) , (30)
 , CPU(10) RAM(11) 가 (30)
 (33) , RAM(11) (31) (c) .
 (c) , (31) , (30) (32)
 (d) (30) , (30)
 (e) (32) , 2 , (33) ,
 (31) (33)
 (read) (h) (32) .
 (h) , (32) , (g) (33)
 (32) , 1 (g)

가 (33) (i) (34) (33)

(15) 3 5 (30), (31), (32) 3, 2 4, 3 5, 3

RAM(30a) (32a)

3, CPU(10) (c) (31a) RAM(30a) RAM(30a)

30a), (c) CPU(10) 8 CPU(10) (a) RAM(11)

(b)가 (b) RAM(30a) (31a)

RAM(30a) (b)가

M (30a) RAM(30a) CPU(10) (c) RAM(11)

(31a)

RAM(30a) 4 '1000h'(h 16) '100Fh' 4 '2FFFh' '1100h' '110Fh' 2가 '2FFFh' 16 x8

8 (fragment)가 RAM(31a) (31a) 가 RAM(30a)

8 RAM(30a) 16 16 m(m)

4 FM

SR(sustain rate), ERB(reverb on/off), SUS(sustain level), RR(release rate), DR(decay rate), WS(), FB()

ROM(30b) 4

CPU(10) (c) (31b) 가 RAM(30a) (31b) (c) (31c) (voice address) ()

가 (31d)가 가 (31e) (que ue) (31e) (31e) , FIFO(first in first out)

(31f) (31e) (31c) (31f) (31f) (d)

(31a) (31f)

M(30a) (31a) (d) 가 RA RAM(30a) ROM(30b) 가 RAM(30a) ROM(30b) 15 1 (32a) (e) (30c) (31e) (f)

(32b) , (32a) ,
 , (32b) , (32a)
 , (32a) , (30c) , (32a)
 (e) ,
 , (31c) , (33) , (31c) , (33) ,
 (33)가 , (33) , 가 (32a) , ,
 (33) , (h) , (32b) , (h) ,
 (32b) , 가 ,
 , (32a) , , 가,
 , (33) , (33)가 ,
 , (32a) , 가 5 , 5
 , (32a) , SR , FB , 1
 , 가 1 , (32a) , (33)
 가 N , 2 (#1) , 2 , N , 가 , 1 , (#0) , 1 , N (#N)
 (32a) , (, N , 60) , -1 , , 1 , 가
 (33) , (33) , 가 ,
 , (32a) ,
 , (key on mask)
 , (31d)가
 , (31g) , (31g) , (33) , (33)
) (32a) , 가 , (33) (31g) , ,
 , (33) ,
 , (33)가 PCM , ROM(30b) , RAM(30a)
 , (33) , (31a) , (31a) ,
 , (31a) , 가 , RAM(30a)
 (30c) RAM(30a) , ROM(30b) , , 가
 (33) , ROM(30b) , (33) ,
 , RAM(30a)
 , 2 , (15) , 가 6 ,
 , (1) , 가 , 6 , 가 ,
 S1 , , S2 , 가 , S3 , (15) , S4 , 가
 , S2 , S4 , S2 , S4 , 가 ,
 , 6 , S2 , S4 , 가 7 , 9 ,

6 S2 가 7 .
 가 가 , 가 (17) 가 . 7 S10 , CP
 U(10) , 가 , CPU(10) (c) S1
 1 (15) , RAM(11) (a) , S1
 S11 RAM(11) 가 (30) RAM(30a) .
 S10 CPU(10) 가 , S1 .
 S1

6 S3 가 8 .
 8 , 가 가 , S20 CPU(10) ,
 , CPU(10)가 (15) CPU(10) (31) (c) ,
 S21 S22 S21 S21 가 RAM(30a) S22 ROM(30)
 b) 가 (32a) , S21 가 S1 , S20 C
 S21 S22 가 (32a) , S1 , S20 C
 PU(10) S1 .

6 S4 가 9 .
 가 (15) 가 , 가 ,
 (31) 가 (33) S30 , (33) ,
 S31 (33) (32a) ,
 , S32 , S33 , S33 가
 , 가 , S1 , S30 가
 , S1 , S30 가
 (32a) 1 1 (33)
 1 1 (33)
 (1)
 / 가 .
 (15) (33) , FM
 FM , FM 가 , FM
 FM 1 FM 2 가 (繼續) FM
 FM
 M ADPCM (15) (33) , FM , DSP (PC)

가

가
가
가
가
가

(57)

1.

2.

1

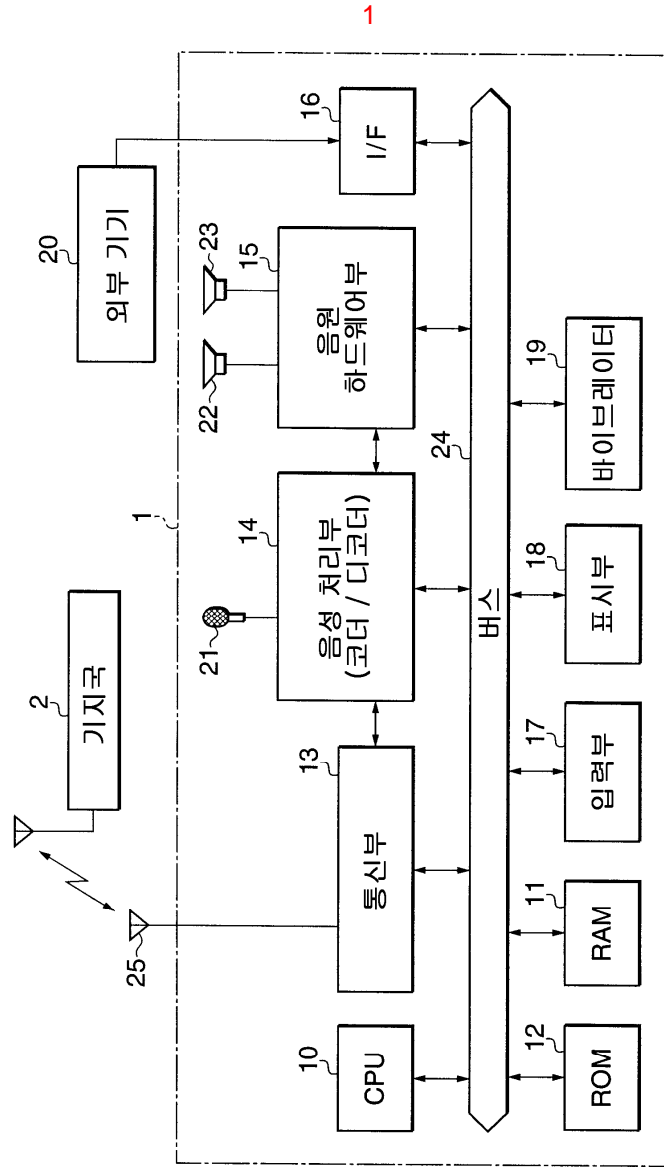
3.

2

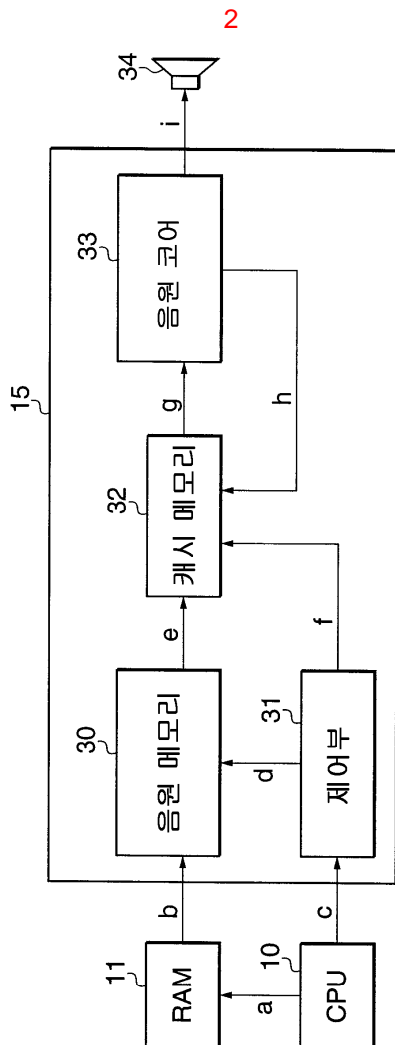
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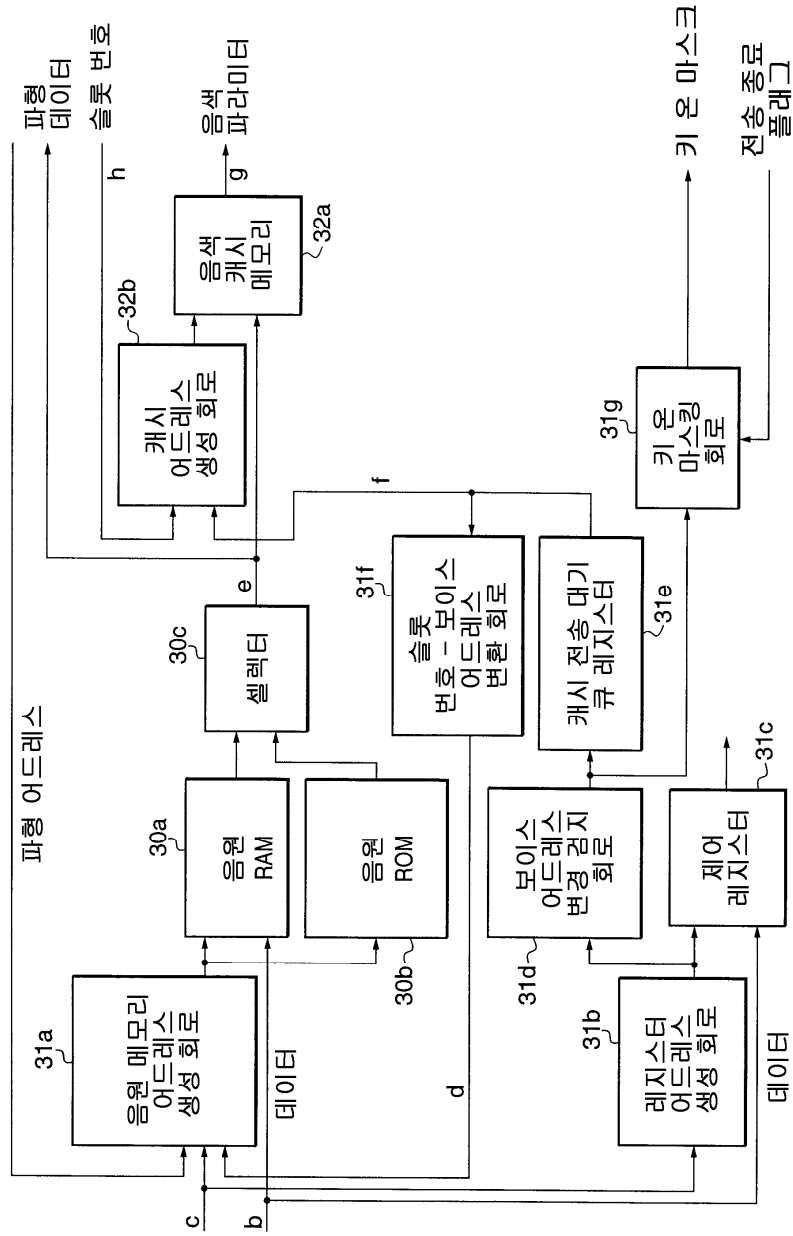
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3

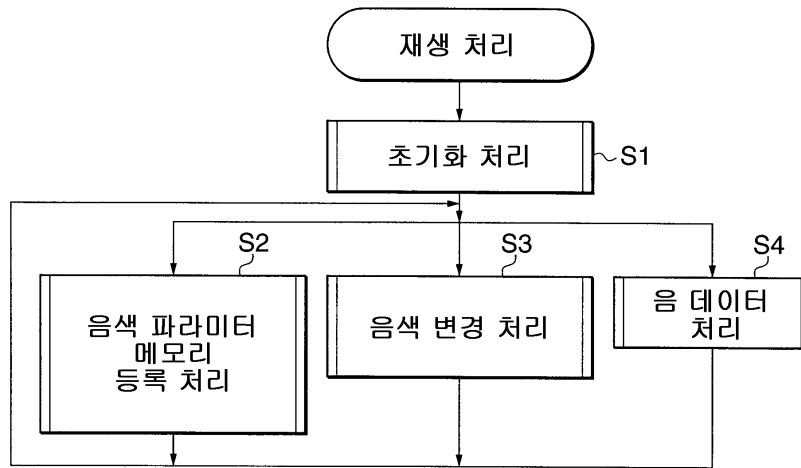


1

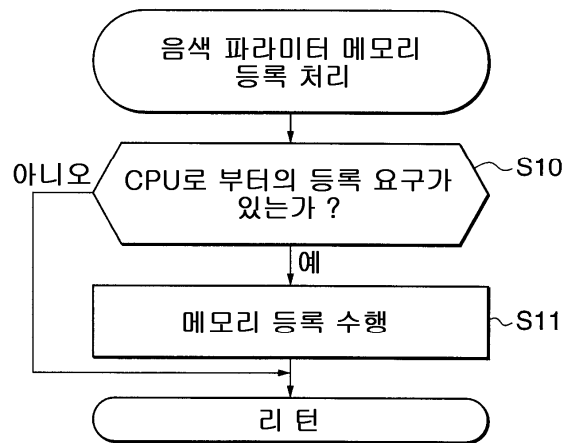




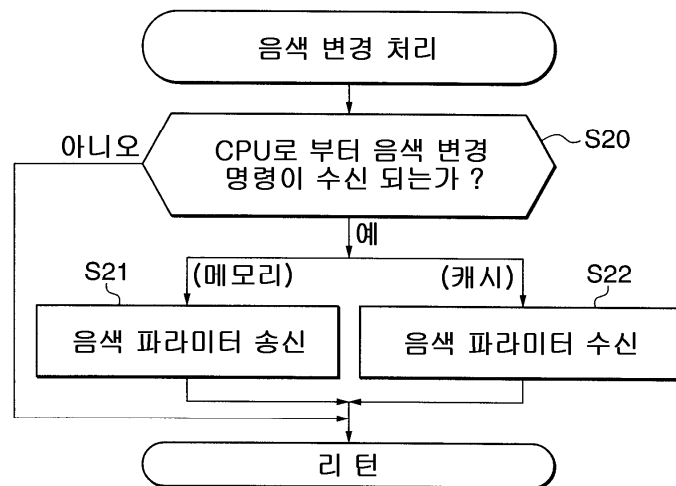
6



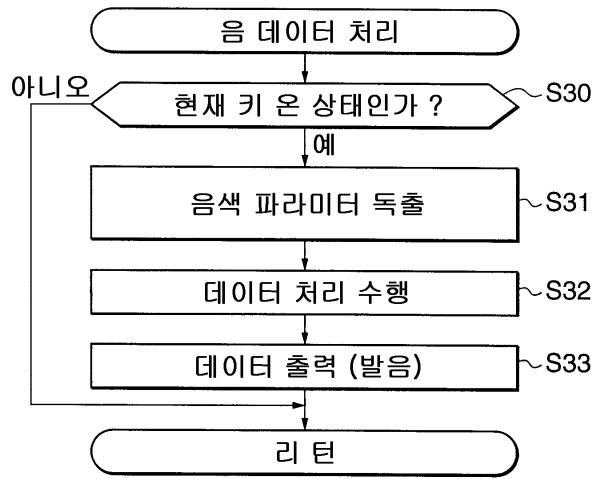
7



8



9



10

