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(21)	10-2000-0051847	(65)	10-2001-0050320
(22)	2000 09 02	(43)	2001 06 15

(30) 99-250101 1999 09 03 (JP)

(73) 가 가  
 1 14 2

(72) 1 14 2 가 가

(74)

:

(54)

, 1, 2 3 1, 2 3  
 . , .  
 1, 2 3 .

3 가 .

4

, , , , ,

1 가  
 2 .  
 3 .

4

5 4  
6 4  
7 4  
8

9 8  
10 8

1 가 , (Re), (Ri)  
(Cm) . ,

가  
 (Cole-Cole) (圓弧) 2 2 x-  
 , y- 2

3 ,  $R_o$ ,  $R_{inf}$ ,  $\frac{Zc}{R_o - R_{inf}}$ , , ,  $Fc$   
 $Fc$ , , , , ,  $Zc$ , 0  
 $Zc$ , , , , , (餘脂肪)

, ( , kHz 1MHz )

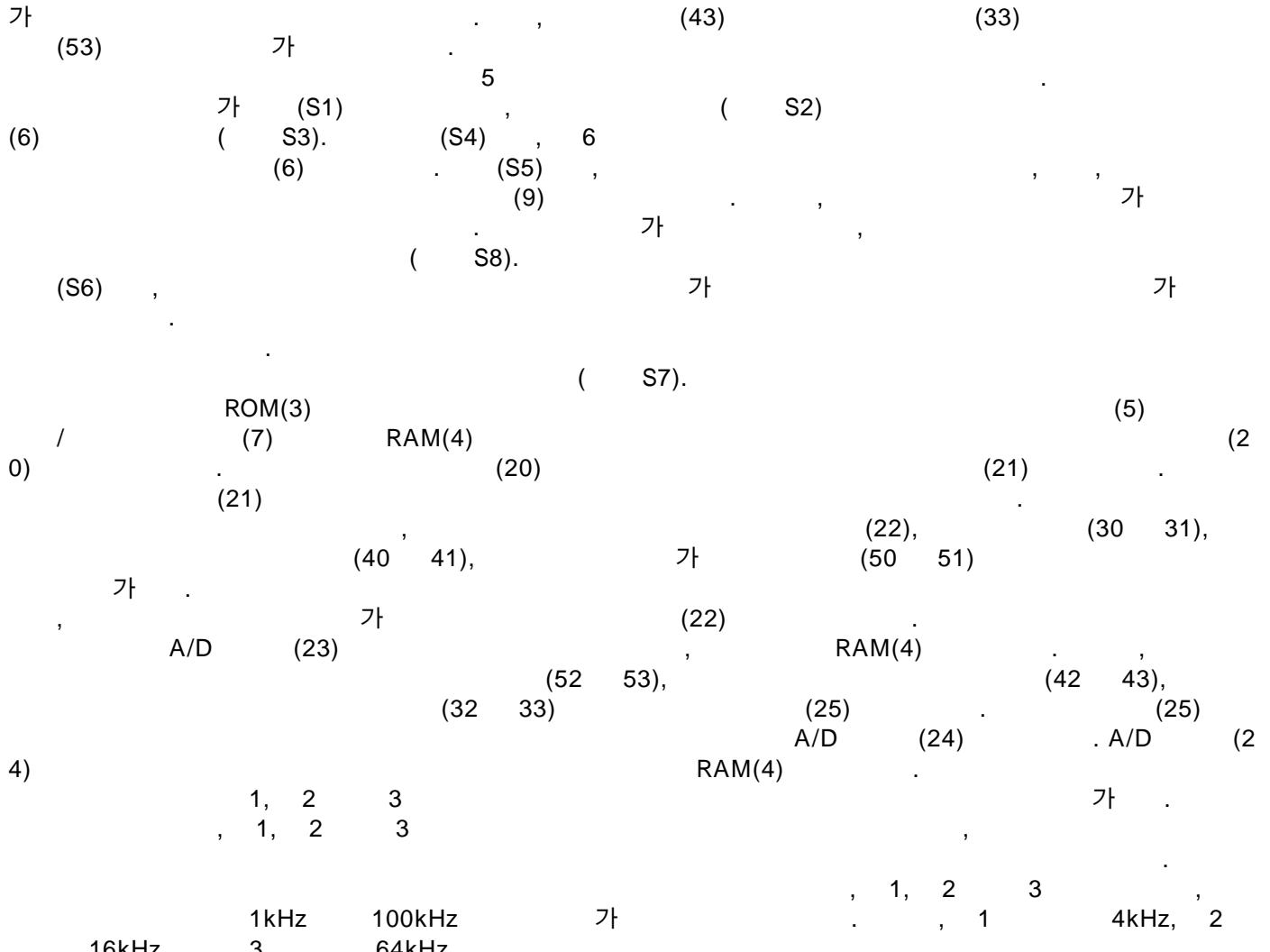
2

2

가

1  
2  
3

1, 2 3 , ,  
 , 1, 2 3 1kHz 100kHz 가 ,  
 , , , ; 1 , 2 , 3  
 1, 2 3 ( ) ;  
 , , ; ( ) ,  
 , ; ;  
 , , , , 1kHz 100kHz  
 , , , ,  
 , 4 10 , , 가  
 4 , , , 1 2  
 1 , , / 1  
 (2); ROM(3);  
 , RAM(4); , , 가  
 , (5); , ,  
 (6);  
 / (7); , / (7) (8);  
 (9);  
 (11) (10); (11) (12)  
 (2) (2) ROM(3) RAM(4)  
 (20); ROM(3) RAM(4)  
 가 (20) (21);  
 (21) (30 31); (22) (22) (21);  
 (22) (22) (21);  
 (23); (32 33); (32 33) (22);  
 (24); A/D  
 (25); (32 33); (32 33) (25);  
 4 가  
 (40) (42) 가 (30) (30) (50) 가  
 , , , (32) (41) (50) 가  
 (52) (31) (51) 가  
 (51) 가



$$(X-a)^2 + (Y-b)^2 = r^2$$

(가)  $Z_1, Z_2$   $Z_3$  ( ) 1, 2 3 ( )  $F_1, F_2$   $F_3$  1, 2 3

$$\begin{aligned} X &= a \pm \sqrt{(r^2 - b^2)} \\ R_o &= a + \sqrt{(r^2 - b^2)} \\ R_{inf} &= a - \sqrt{(r^2 - b^2)} \\ Re &= R_o \\ Ri &= R_o \cdot R_{inf} / (R_o - R_{inf}) \end{aligned}$$

$$X = a, Y = b - r$$

$$Z_c = R_c + jX_c = a + j(b - r)$$

$$Z(\omega) = R_{\text{inf}} + (R_o - R_{\text{inf}})/(1 + (j\omega/\omega_c))$$

$$= 1/(C\omega), \quad Z(\omega) = R_{\text{inf}} + (R_o - R_{\text{inf}})/(1 + (j\omega/\omega_c))$$

$$\omega_c = 2\pi F_c$$

(ECW), (ICW), (TBW), (FFM),  $R_o$ ,  
 $R_{\text{inf}}, R_i, Z_c, F_c$

(S9).

8 , 9 . . . . .  
 (100) (100) 가 9  
 CPU, ROM, RAM, , I/O (102);  
 (106) , , , (103);  
 / (104); /  
 (106); (102) (105);  
 , (110) , ,  
 가 (111) ,  
 (111) (110);  
 (112) (111);  
 (113); (112);  
 22 123 (120); (111);  
 (114); (112);  
 (115); (115) (122 123) (122 123);  
 (116); (113 114);  
 (117); (102) (116); (113 114);  
 A/D (118) (102) (117)

(57)

가

2.

$$1 \quad , \quad (R_{\infty}) \quad R_{\infty} = a + \sqrt{(r^2 - b^2)} \quad , \quad X \\ a \quad , \quad Y \quad b \quad , \quad r \quad .$$

3. 1 2 3 1kHz 100kHz

1

1 . . . . . 1 2 3

1kHz 100kHz

5.

가

,

, 1 , 2 , 3  
 ; 1 , 2 , 3  
 ; ; ;

6.

$$5 \quad , \quad (R_{\infty}) \quad R_{\infty} = a + \sqrt{(r^2 - b^2)} \quad , \quad X$$

$a \quad , \quad Y \quad b \quad , \quad r \quad .$

7.

5 ,

$$(B \rightarrow) \quad R_0 = a + \sqrt{(r^2 - b^2)}$$

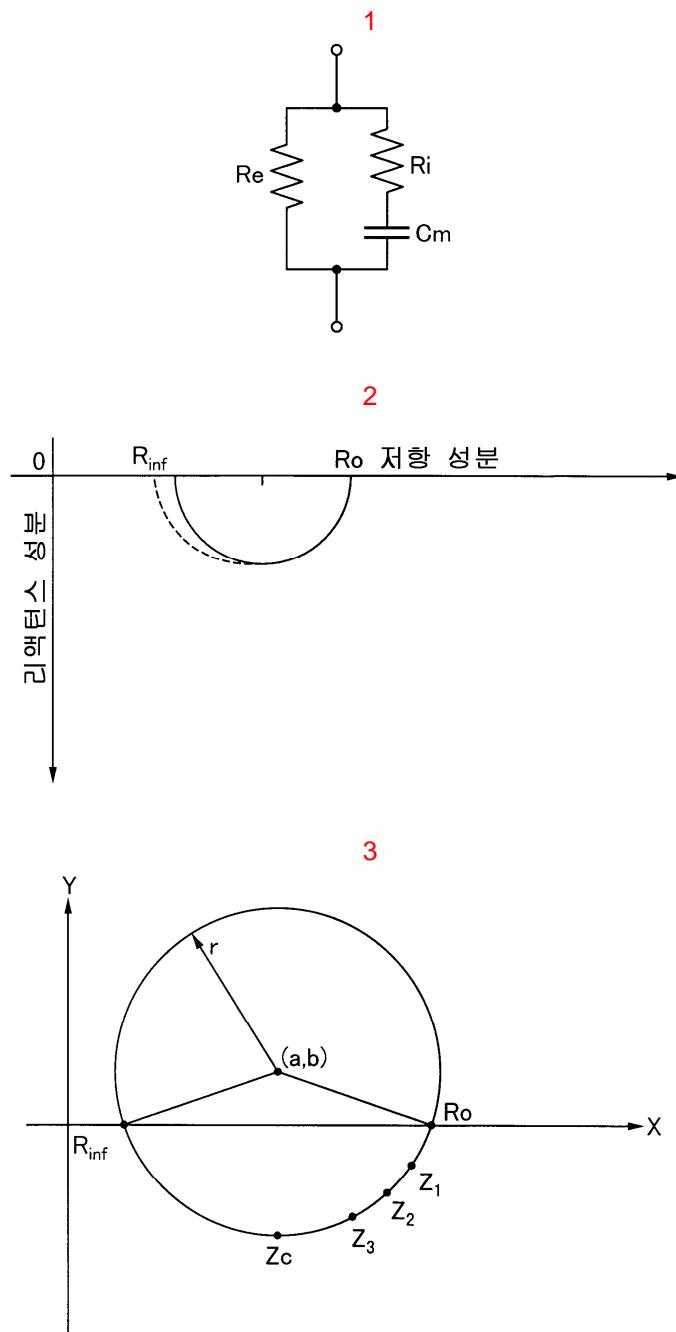
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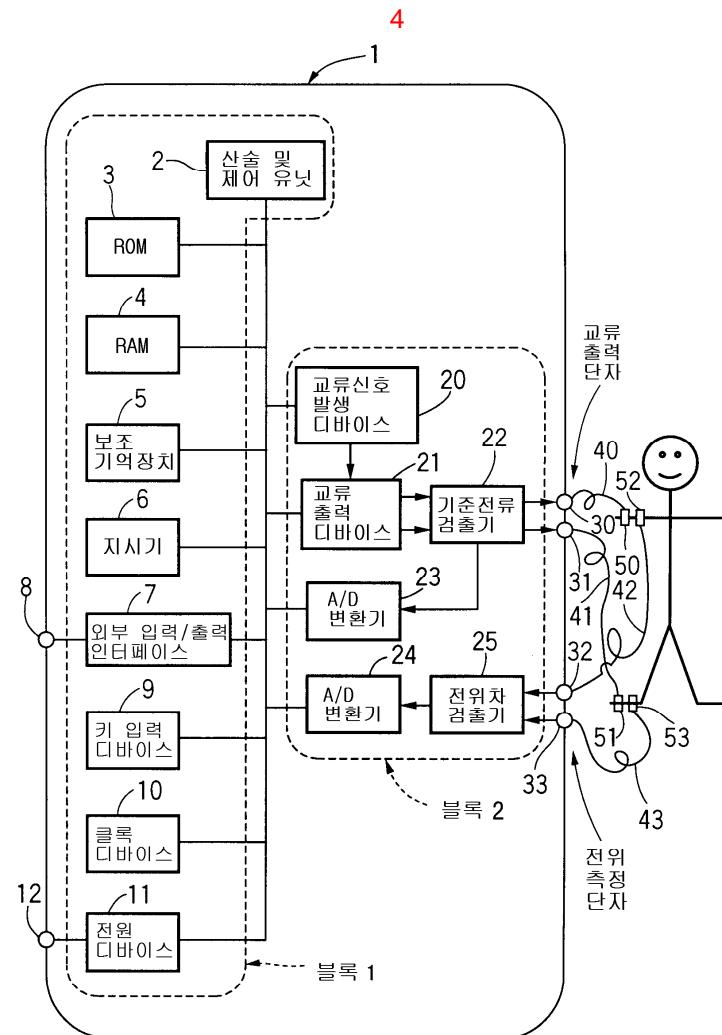
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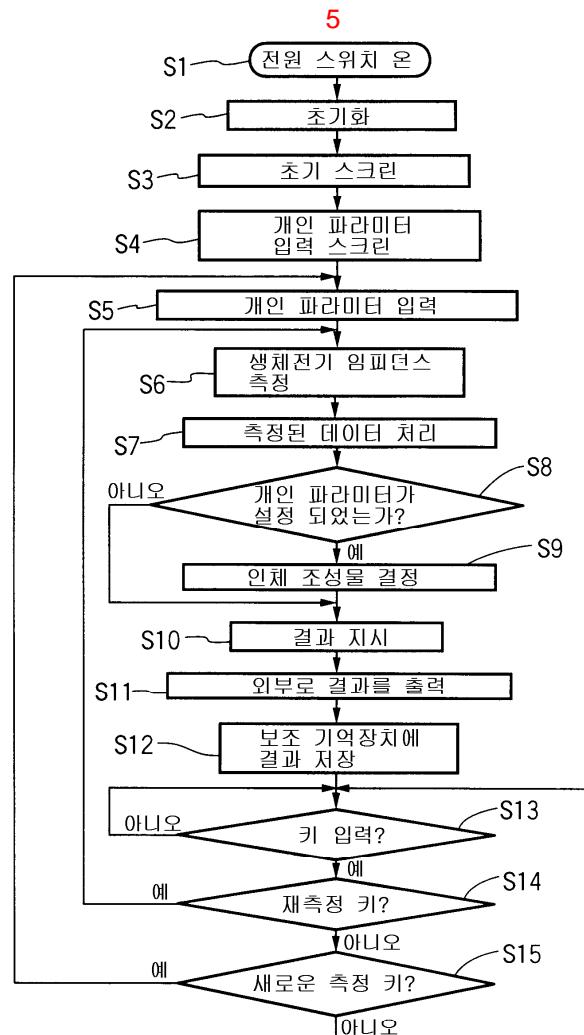
8.

9.

10





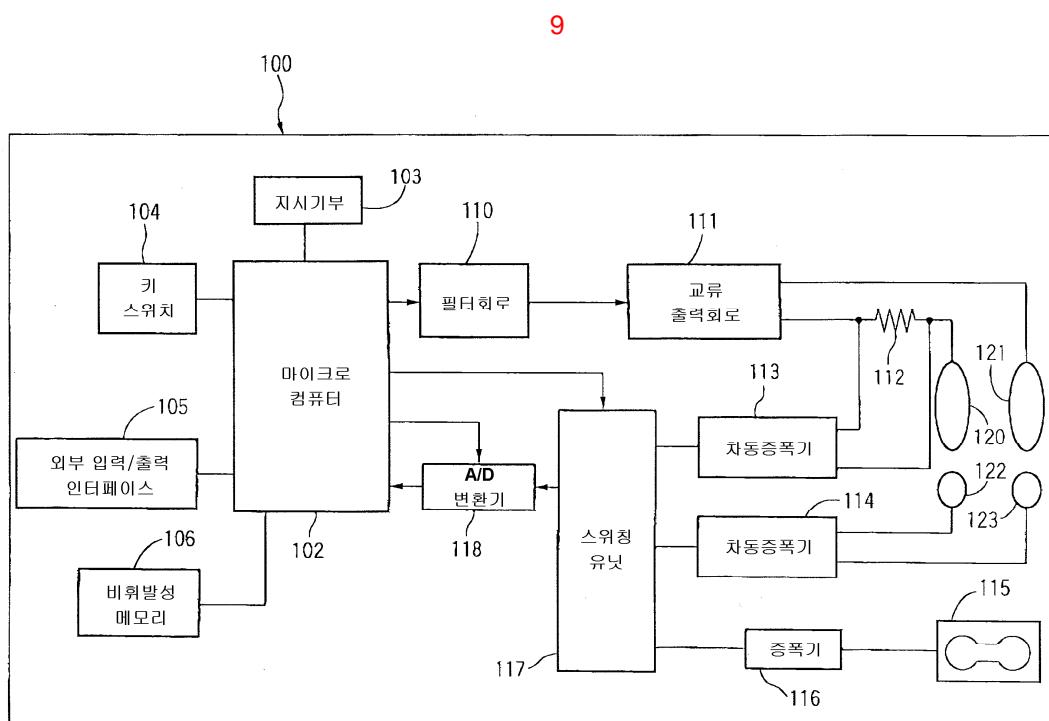
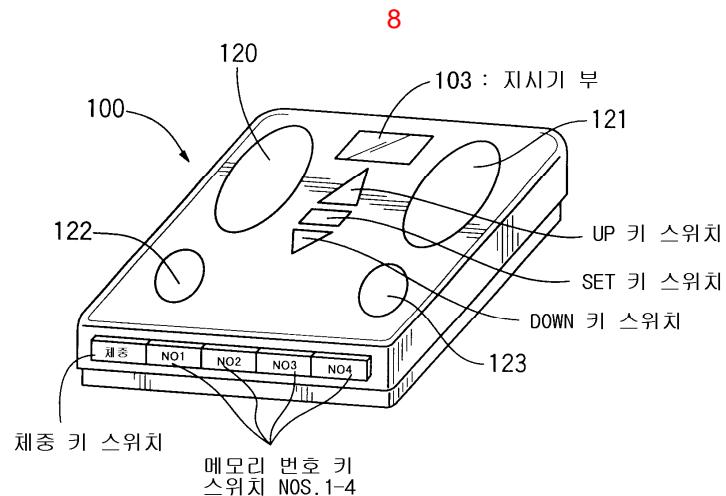


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파라미터 입력	
ID	:009876
성별	: 남성
연령	:
신장	: cm
체중	: kg

7

측정 결과			
Ro/Re:	$\Omega$	ECW:	$\Omega$
Rinf:	$\Omega$	ICW:	$\Omega$
Ri:	$\Omega$	TBW:	$\Omega$
Rc:	$\Omega$	FFM:	kg
Xc:	$\Omega$	FM:	kg



10

