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2003 03 29(21) 10 - 2002 - 0057129
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(30) JP - P - 2001 - 00287989 2001 09 21 (JP)

(71) 53188 3000

(72) 가 4 7 - 127
가 4 7 - 127

(74)

:

(54)

(fundamental component)
(harmonic image)

(tail)

, 1 가 (acoustic line) ,
1 2 가 .

1

1 1 ,

2 1 B ,

3	1				,
4	2				,
5					,
6	2				,
7	3				,
8	3				,
9	4				,
10	4				,
11	5				,
12					,
13	5				,
14		B			,
15					,
16					.

1 : 4 :

5 : B 6 : DSC

7 : CRT12 : /

13 :

(fundamental component)
(harmonic image)

14 B . 14 , B

(, 5 cm) fs가 t1 , 14
 (,) t1 가
) t1 가

t2 t1 fs 가 (,
)

(, 10 cm) fm t2 , 14
 t2 가
 t2 가

t3 t2 fm 가

(, 15 cm) fd가 t3 , 14
 t3 가
 t3 가

t4 t3 fd 가

(, 5 cm) fs가 t4 , 14
 t4 가
 t4 가

, 가

$\frac{1}{\tau_m} \cdot \frac{1}{(\tau_s + \tau_m + \tau_d) \div N}$, t1 t2 τ_s , t2 t3
 , 1 , t3 t4 τ_d , fs, fm, fd
 , $\tau_s < \tau_m < \tau_d$.

fs, fm, fd τ_s , fm ,
 fd , fs ,
 fd

τ_m , fd , fs

, τ_d ,

, $\frac{1}{(3 \cdot \tau_d) \div N}$, 14 .

Figure 1 illustrates the experimental design, showing a sequence of 16 trials. Each trial consists of a fixation cross (fs) and a target stimulus (fm, fd). The trials are divided into four groups: fs+ (1-4), fs- (5-8), fm+ (9-12), and fm- (13-16). Each trial is represented by a horizontal bar with a green segment (fs) and a red segment (fm, fd). The duration of each trial is 16 ms. The trials are arranged in a 4x4 grid, with the first column representing the fs+ group, the second column representing the fs- group, the third column representing the fm+ group, and the fourth column representing the fm- group. The rows represent the target stimulus (fm, fd) and the phase (in phase, out of phase).

t7' , 1 fs+가 B t6' τ d

, 가

, B

, B

가

가

16

, 가

fs -

fm+가

fm+

fm - 가

1

(subject)

1

2

가

2

3 1 , 1 1 , 1
 2 1 , 1 2 , 2
 , 2 , 1 2 (sum)
 , 1 2 , 2 가 1
 2

3 , 2 1
 , 1 2
 . , .

4 1 , 1 1 , 1
 2 1 , 1 2 , 2
 , 2 , 1 2
 , 1 ,
 2 .

4 , 1 , 1
 2
 , 2 ,
 가 . , .

5 1 , 1 1 , 1
 2 1 , 1 2 , 2
 , 2 , 1 2
 , , 1 2
 , 1 2 2
 , 1 2 2

5 , 1 , 가
 , 2 가 , 1 2
 . , .

6 , , .

6 , , 가
 , , 가
 , 가 .

7 , , B
 ,
 .

7 , , B , B
 ,
 가 .

8 , B
 ,
 .

8 , B ,
 .

9 , , / ,
 ,
 , / ,
 .

9 , 1
 .

10 , , / ,
 ,
 , / ,
 가 .

10 , 2
 .

11 , , 1 1
 1 2 / , 2 1
 ,
 , / , 1 2 가 1
 2
 .

11 , 3

.

12 , / 1

, 2

.

12 , 4

.

13 , /

1

2

,

1

2

.

13 , 5

.

14 , /

,

.

14 , 6

.

15 , / , B

,

.

15 , 7

.

16 , / ,

,

B

.

16 , 8

.

,

,

,

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,

.

가

.

1

1 1

(10) (1) , (1) / (12) ,
 (4) , (13) , B B (5) ,
 DSC(6) , CRT(7) .

2 (4) B 가 .

2 , B , , , .

(, 5 cm) fs가 t1 , 2
 (,) t1 가
) t1 가
 .

t2 t1 fs 가 (,

(, 10 cm) fm t2 , 2
 t2 가
 t2 가 .

t3 t2 fm 가

(, 15 cm) fd가 t3 , 2
 t3 가
 t3 가 .

t4 t3 fd 가

(, 5 cm) fs가 t4 , 2
 t4 가
 t4 가 .

, 가 .

$\frac{1}{\tau_s + \tau_m + \tau_d} \div N$, t1 t2 τ_s , t2 t3
 τ_m , t3 t4 τ_d , fs, fm, fd
 , 1 N . , $\tau_s < \tau_m < \tau_d$.

[illegible]

$$1/(\tau_s + s + \tau_m + m + \tau_d + d) \div N, \quad fs, fm, fd$$

$$, 1 \quad N, \quad \tau_s + s < \tau_m + m < \tau_d + d.$$

$$fs, fm, fd \quad \tau_s + s, \quad fm$$

$$fd, \quad ,$$

$$fd, \quad fs, \quad ,$$

$$\tau_m + m, \quad fd, \quad fs$$

$$, \quad \tau_d + d, \quad .$$

$$, \quad 1/\{3 \cdot (\tau_d + d)\} \div N, \quad 3.$$

$$, \quad fs, fm, fd \quad 3, \quad ,$$

$$, \quad , \quad , \quad .$$

2

$$4 \quad 2.$$

$$(20) \quad (1), \quad (1), \quad (22),$$

$$, \quad (13), B$$

$$(4), \quad DSC(6), \quad CRT(7), \quad B \quad (5),$$

$$(4) \quad B \quad 가 \quad 2(1) \quad .$$

$$5 \quad 1.$$

$$fd, \quad 1, \quad fs, \quad fm, \quad 가 \quad .$$

$$\quad \#0 - \#5$$

$$6 \quad (4) \quad 가 \quad .$$

$$\#0 \quad t1 \quad 가 \quad \#0fs가 \quad t1, \quad 6$$

$$t1 \quad 가 \quad .$$

$$B \quad t2 \quad t1 \quad \tau_s.$$

$$\#3 \quad t2 \quad 가 \quad \#3fs가 \quad t2, \quad 6$$

$$t2 \quad 가 \quad .$$

t_1 t_2 τ_s , B
 $\#0$ $\#3$, $\#0fs$ $\#3fs$
 , .
 t_3' t_2 τ_s .
 $\#0$ $\#0fm$ t_3' , 6
 t_3' 가 t_3' 가
 t_3' 가
 t_2 t_3' τ_s , B
 $\#0$ $\#3$, $\#3fs$ $\#0fm$
 , .
 t_4' t_3' τ_m .
 $\#3$ $\#3fm$ t_4' , 6
 t_4' 가 t_4' 가
 t_4' 가
 t_3' t_4' τ_m , B
 , $\#0$ $\#3$, $\#0fm$ $\#3fm$
 , .
 t_5' t_4' τ_m .
 $\#0$ $\#0fd$ 가 t_5' , 6
 t_5' 가 t_5' 가
 t_5' 가
 t_4' t_5' τ_m , B
 , $\#0$ $\#3$, $\#3fm$ $\#0fd$
 , .
 t_6' t_5' τ_d .
 $\#3$ $\#3fd$ 가 t_6' , 6
 t_6' 가 t_6' 가
 t_6' 가
 t_5' t_6' τ_d , B
 $\#0$ $\#3$, $\#0fd$ $\#3fd$
 , .
 t_7' t_6' τ_d .
 $\#1$ $\#1fs$ 가 t_7' , 6
 t_7' 가 t_7' 가
 t_7' 가

t_6' t_7' τ_d , B
 $\#1$ $\#3$, $\#3fd$ $\#1fs$
 , 가
 $1/(\tau_s + \tau_m + \tau_d) \div N$, B
 3
 7 3
 (30) (1) , (1)
 , / (32) , 1
 (8) , 1 2 1
 (8) 1 가 , 가 (9) , B
 (4) , DSC(6) , CRT(
 7) B (5) ,
 (4) B 가 $2(1)$
 8 (4) 가
 t_1 $fs+$ 가 t_1 , 8 1
 t_1 가 1
 t_1 가
 t_2'' t_1 $fs+$ 1 가 t_1 t_2''
 $(\tau_s + \delta s)$ B τ_s ,
 가 , 1 $fs+$ 2 $fs-$ 가 t_2''
 , 8 2 t_2'' 가
 t_2'' 가
 t_3'' t_2'' 2 $fs-$ 2 가 t_2''
 $(\tau_s + \delta s)$ B τ_s ,
 t_3'' 1 $fm+$ 가 t_3'' , 8 1
 t_3'' 가 1
 t_3'' 가

t_4'' t_3'' 1 $fm +$ 1 가
 t_4'' $(\tau m + \delta m)$ B τm , t_3''
 , 8 가 , 1 $fm +$ 2 $fm -$ 가 t_4''
 , t_4'' 가
 가
 t_5'' t_4'' 2 $fm -$ 2 가
 t_5'' $(\tau m + \delta m)$ B τm , t_4''
 1 $fd +$ 가 t_5'' , 8 1
 t_5'' 가 가 1
 t_6'' t_5'' 1 $fd +$ 1 가
 t_6'' $(\tau d + \delta d)$ B τd , t_5''
 , 8 가 , 1 $fd +$ 2 $fd -$ 가 t_6''
 , t_6'' 가 가
 , 가
 가 (9) 1 2 가 , ,
 8 , ,
 4
 9 4 .

(40) (1) , (1) ,
 , (8s) , (42) , 1
 1 (8m) , 1 1
 (8d) , (8s, 8m, 8d) (43) , 1
 2 가 (9) , B (43) 1 가
 (4) , B (5) ,
 DSC(6) , CRT(7) .

(4) B 가 2(1) .

10 (4) 가 .

1 fs+가 t1 , 10 1
t1 가 . 1
t1 가 .

B t2 t1 τ s .

1 fm+가 t2 , 10 1
t2 가 . 1
t2 가 .

B t3 t2 τ m .

1 fd+가 t3 , 10 1
t3 가 . 1
t3 가 .

B t4 t3 τ d .

가 , 1 fs+ 2 fs - 가 t4
, 10 2 t4 가
2 t4 가
.

B t5 t4 τ s .

가 , 1 fm+ 2 fm - 가 t5
, 10 2 t5 가
2 t5 가
.

B t6 t5 τ m .

가 , 1 fd+ 2 fd - 가 t6
, 10 2 t6 가
2 t6 가
.

B t7 t6 τ d .

1 fs+가 t7 , 10
1 t7 가 .
1 t7 가
.

, 가 .

가 (9) 1 2 가 , ,

10 fm+ fs+ t2 1
fm- fs- t5 2

5

11 5

(50) (1) , (1) ,
1 (8a) , 1
(8b) , (8a, 8b) (53) , 1
2 (53) 1 가 (4)
, 가 (9) , B (5) ,
, DSC(6) , CRT(7) .
(4) B 가 2(1) .

12 1

fs , fm ,
fd , 1 #0 - #5 가 .

13 (4) 가 .

#0 #0fs+가 t1 , 13
t1 가 .
t1 가 .

B t2 t1 τ s .

#3 #3fs+가 t2 , 13
t2 가 .
t2 가 .

t1 t2 τ s , B
#0 #3 , #0fs+ #3fs+
,

t3' t2 τ s .

#0 가 , 1 #0fs+ 2 #0f
 s-가 t3' , 13 t3' 가
 가 .
 t2 t3' τ s , B
 #0 #3 , #3fs+ #0fs -
 , .
 t4' t3' τ s .
 #3 가 , 1 #3fs+ 2 #3f
 s-가 T4' , 13 T4' 가
 가 .
 t3' T4' τ s , B
 , #0 #3 , #0fs - #3fs -
 , .
 T5' T4' τ s .
 #0 1 #0fm+가 T5' , 13
 T5' 가 가 .
 .
 T4' T5' τ s , B
 , #0 #3 , #3fs - #0fm+
 , .
 T6' T5' τ m .
 #3 1 #3fm+가 T6' , 13
 T6' 가 가 .
 .
 T5' T6' τ m , B
 , #0 #3 , #0fm+ #3fm+
 , .
 , 가 .
 가 (9) 1 2 가 , ,
 .
 13 , , ,
 .

(57)

1.

/ (acoustic line)

2.

/
가

3.

,
 ,
 / ,
 1 1 1 2
 2
 ,
 ,
 ,
 / , 1 2 , 2 가 1
 2

4.

1 3 ,
 / 1 , 2

5.

1 3 ,
 / 1 1 2 2 ,
 1 2

6.

1 3 ,
 / ,

7.

1 3 ,
 / , B ,

8.

1

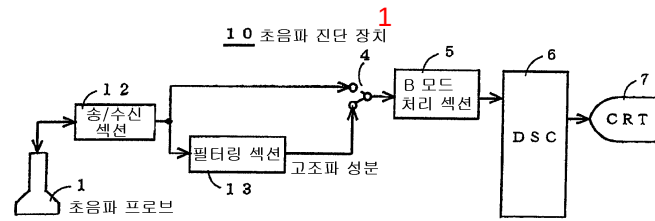
3

/

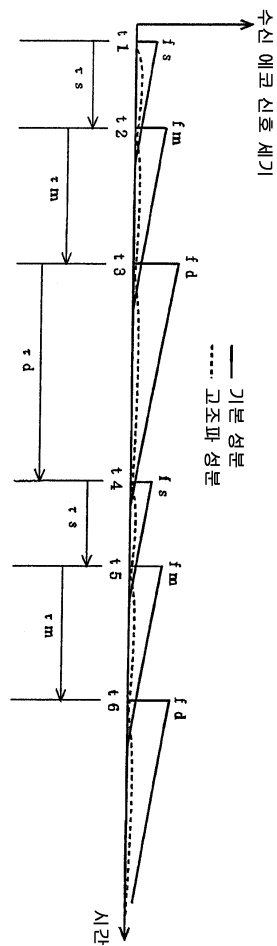
,

,

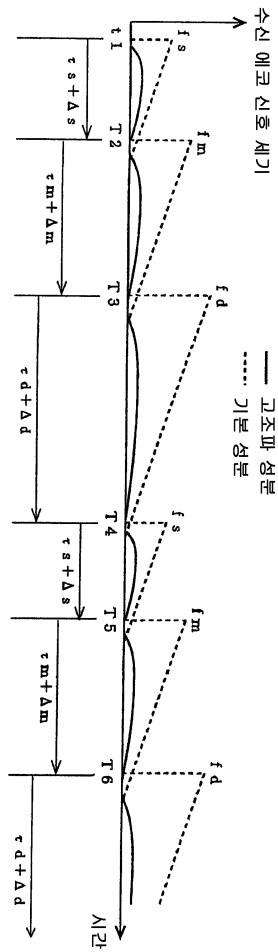
B



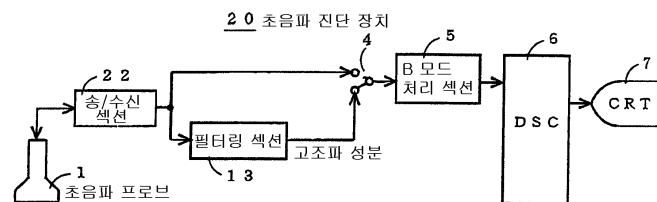
2



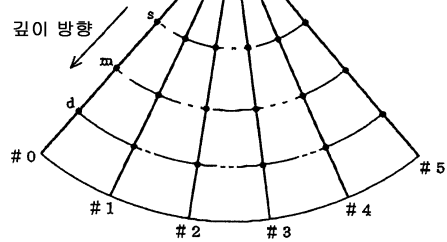
3



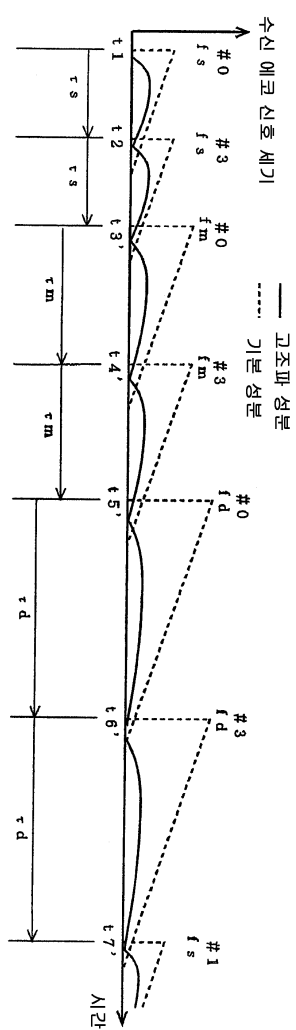
4



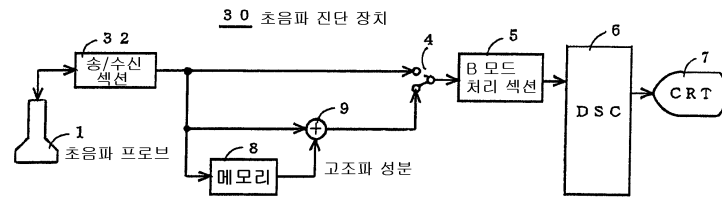
5



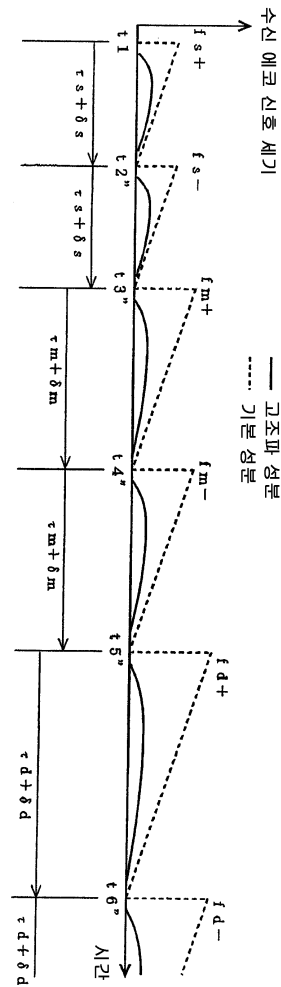
6



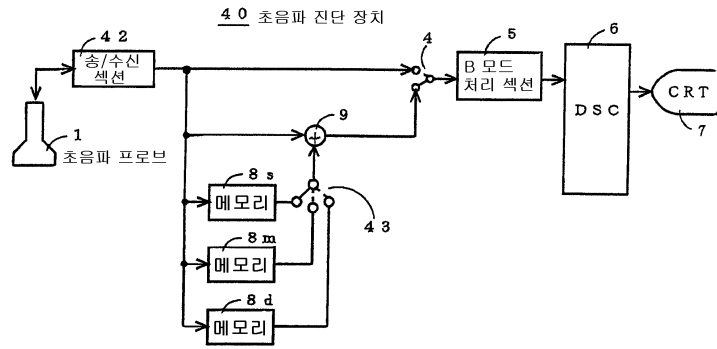
7



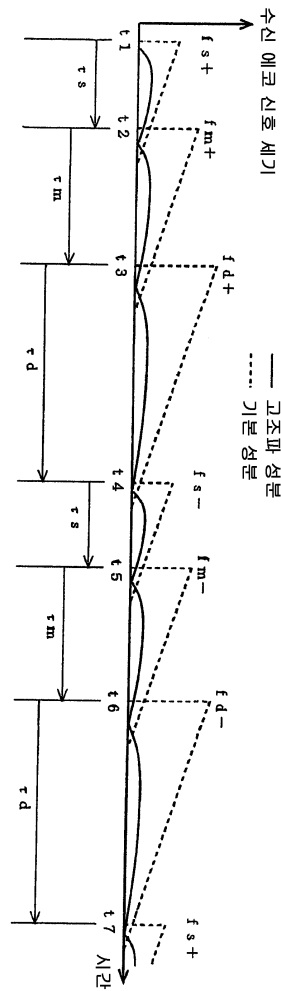
8



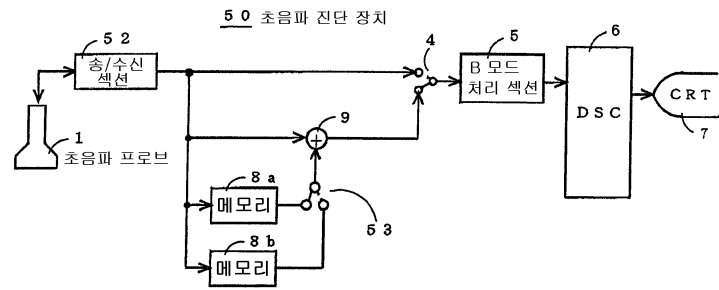
9



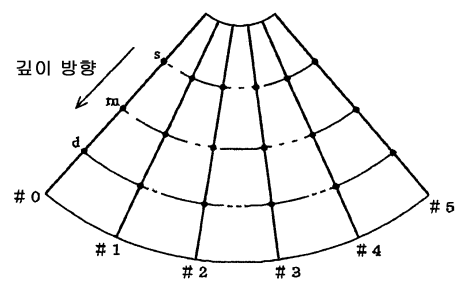
10



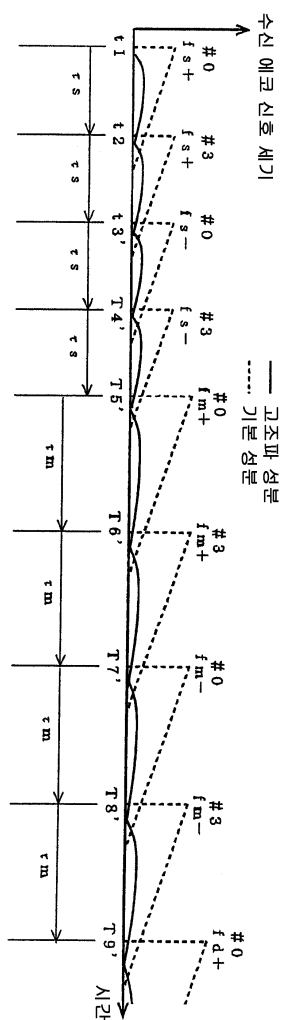
11



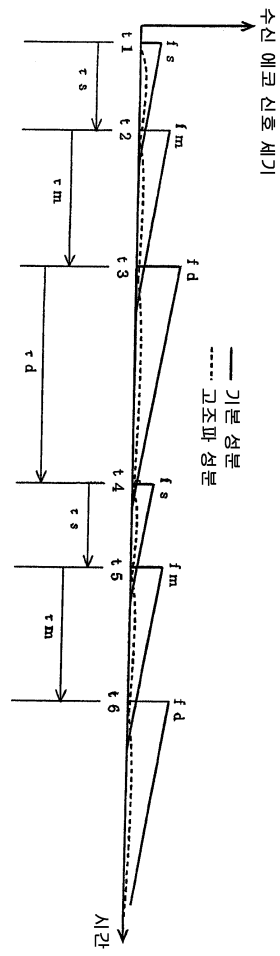
12



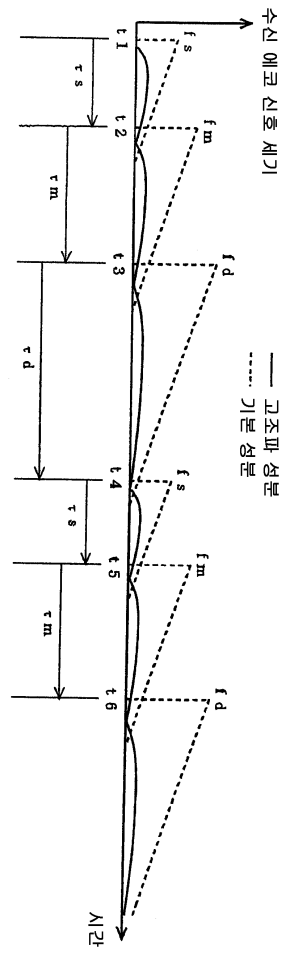
13



14



15



专利名称(译)	超声波诊断设备		
公开(公告)号	KR1020030025861A	公开(公告)日	2003-03-29
申请号	KR1020020057129	申请日	2002-09-19
申请(专利权)人(译)	지이메디컬시스템즈글로벌테크놀로지캄파니엘엘씨		
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代理人(译)	KIM, CHANG SE 张居正, KU SEONG		
优先权	2001287989 2001-09-21 JP		
其他公开文献	KR100521566B1		
外部链接	Espacenet		

摘要(译)

目前,连续传输到声束(声线)上的多个焦点,其中第一超声波脉冲与消除由于尾端不能获得良好谐波图像的问题相同的目的(尾部)根据操作中的谐波模式中的相位反转技术,先前接收的数据的基本分量渗透到接收数据的基本分量中。连续传输到声束上的多个焦点,其中与相位的第一超声波脉冲的相位相反的第二超声波脉冲是相同的。

