

(19)
(12)(KR)
(A)(51) 。 Int. Cl. ⁷
A61B 8/00(11)
(43)2002 - 0079560
2002 10 19(21) 10 - 2002 - 0019416
(22) 2002 04 10

(30) JP - P - 2001 - 00112466 2001 04 11 (JP)

(71) 53188 3000

(72) 가 4 7 - 127

(74)

:

(54) , ,

가 ,
가 ,

1

1 ,

2 ,

3 5 ,

6 ,
 7 ,
 8 ,
 9 ,
 10 ,
 11 ,
 12 13 ,
 14 16 ,
 17 ,
 18 .

2 : 4 :
 6 : 10 : B -
 12 : 14 :
 16 : 18 :
 20 : 402 :
 602 : 604 :
 606 : 608 :
 610 : 622 :
 624 : 626, 616 :
 612 : 614 :

,
 , (ultrasonic contrast agent)가 ,
 , .

가 , B
(dynamic image)

(infuse) 가 가 , (a Region Of Interst : ROI) 가
 μm

가 ,
가

()

가 ,

SNR()

(1) 가

(2) 가
1 ,
가 2 , 2
1 ,

(3) 가

(4) 가
1 ,
가 2 , 2
1 , 2
2 , 1
2 .

(1) (2) , ,
가 , , 가 가 SNR 가 .

(3) (4) , , 가
가 SNR 가 , , , 가
 , .

, 가
(Barker code) .
(side lobe)
(Golay code) .

1
(2) PZT((2) ((2)
(402)가 (2) (4) (4)
(2) (6) (6) (2)
(6) (2) (6) (2)

2 (6) , (6) (602) .
 (602) , (604) .
 (602) (18) .
 (604) ,
 가
 (18) (604) /
 (606) .
 / (606) .
 (aperture) 가
 (wavefront synthesis) ,
 / (606) (608) / (606) (608)
 (608) .
 ,
 , 가
 (18) .
 (602) .
 (604) (608) .
 , (4) , 2 (206) (200) 가 z (6) 3 (20
 2) ,
 가 , 4
 (200) z (202) (204) 2 (206)
 , x
 가 (convex array) ,
 5 (204) (,
 202) (200) , 2 (206) ,
 (608) (610) . (610)
 (608) , ,
 (18) , 가 2 . 2
 가 ,
 가 .
 가 , ,
 가 .

2, (602) 6 2
 (624) . 2 (622) ,
 (604) . (626) (18) .
 (622) , 7 가 (P
 c) 가 .
 (624) , 8 가 (P
 c) 가 .
 8 , (624) 가 . ,
 , 가 .
 8 , [+++ -] 4 가 가 가
 . 9 7 .
 2 가 2 , (610) 10
 hrough) (612) , (614) , (616) (t
 (616) (616) (18)
 (616) (616)
 (616) (612) , (626) (622) ,
 (616) (614) . (626) (624) ,
 , (622) (612)
 , (624)
 (614)
 (614)
 (autocorrelation calculation)
 , 11 가
 , 0, -1, 0, +1, +4, +1, 0, -1, 0 가
 .
 , 4 가 가 가 ,
 4 가 가 .
 , SNR 가 가
 가 , 2 [+++ -] [++ - +] 가
 , 12 13 , 2 .
 12 , [+++ -] , 13
 , [++ - +] .

, 14 15 , 가 . 14 0, -1, 0, +
 1, +4, +1, 0, -1, 0 가 , 15 0, +1, 0, -1, +4, -1, 0, +
 1, 0 가 .
 , 16 +8 0 가
 SNR 가 . ,
 가 0 가 가 .
 가 , / 2 . 1 /
 , 2 /
 . 1 2 / .
 , 가 . 17
 17(a) , (T) f 가 가
 (b) (624) , (b) 가 . ,
 (Pc) .
 17(c) , f T 0 가
 (614) , 17(d)
 , 가 가 .
 (622), (626), (604), / (606), (2)
 (608) 1 / .
 (624), (626), (604), / (606), (2)
 (608) 2 / (614)
 . (18) .
 (6) 1 , B- (10) (12) .
 (6) B- (10) (12) (12) .
 B- (10) B- . B- (10)
 , , , ,
 A- , A- B-
 . 2 B- .
 (12) . 2
 (12) , , ,
 MTI(Moving Target Indication)
 (Power) , .
 . ,
 .
 (12) (4) ,
 () ,
 , (2) (2)
 .

B - (10) (12) (14) (14) B - (14) B - (10) (12) B - 2 .

(14) (14) B - (16)
 . B - (10), (12), (14) (16)

(6), B - (10), (12), (14) (16) (18)
 (18) . (18)
 . B - (18)

(18) (20) . (20) , (20)
 (18) (20) ,

, (2) (4)
 , B - (20) . (18)

(6) 3 5 , (2) (4)
 . 2 가
 , 가

, 2 B - , 2 B - ,
 18 (16)

(162) (contrast image) . ,
 (164)

가 SNR 가 , 가
 가

, 가

(57)

1.

가

,

가

,

,

.

2.

1

,

.

3.

2

,

(Barker code)

.

4.

2

,

(Golay code)

.

5.

1

,

.

6.

가

1

,

가

2

,

2

,

1

,

2

.

7.

6 ,

8.

7 ,

9.

7 ,

10.

6 ,

11.

가

,

가

,

,

,

12.

11 ,

13.

12 ,

14.

12 ,

.

15.

11 ,

.

16.

가

1 ,

가

2

,

2

,

1

2

,

1

2

.

17.

16 ,

.

18.

17 ,

.

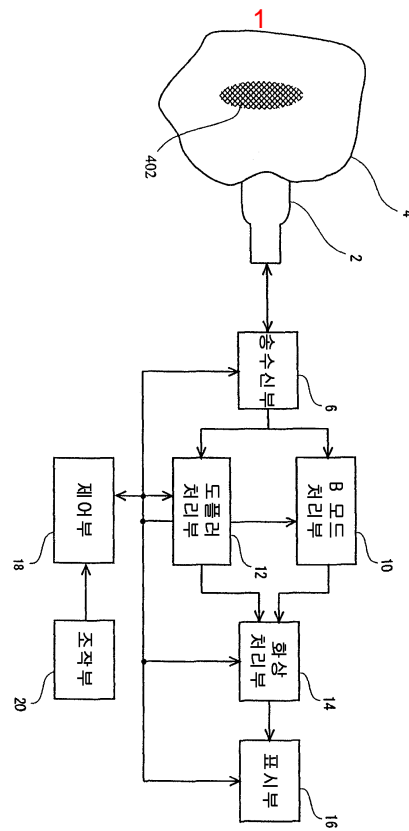
19.

17 ,

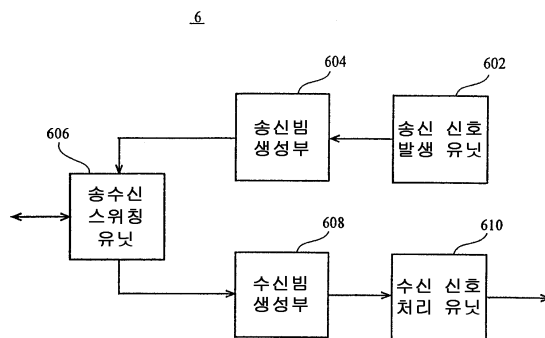
.

20.

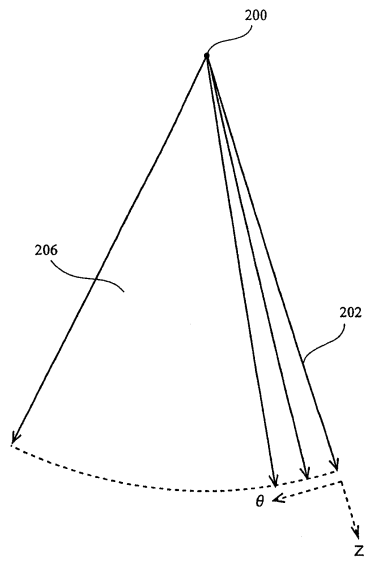
16



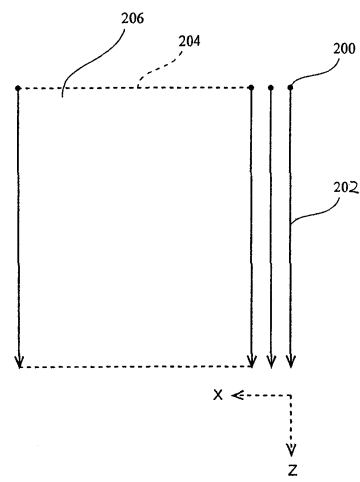
2



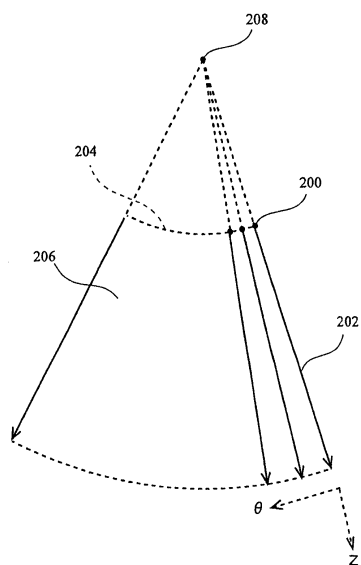
3



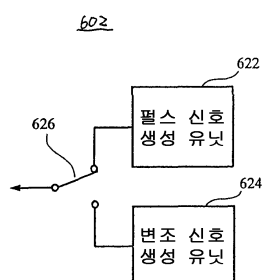
4



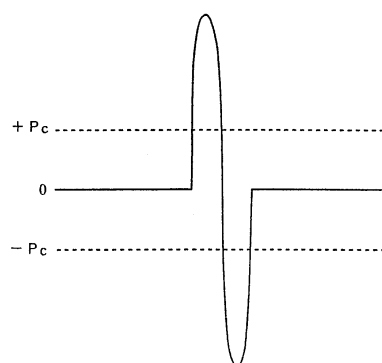
5



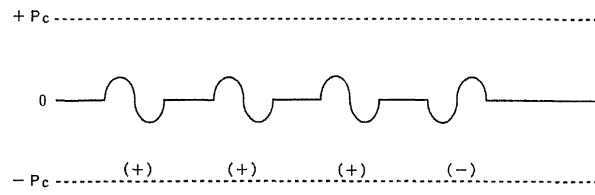
6



7



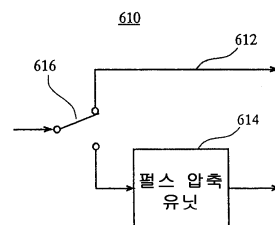
8



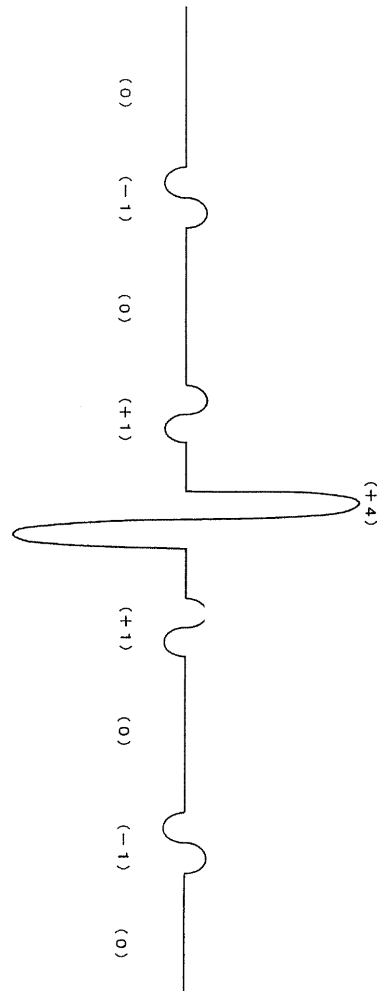
9

코드 길이	코드 시퀀스
N = 2	++ 또는 +-
N = 3	++-
N = 4	+++ 또는 +++-
N = 5	++++
N = 7	+++++-
N = 11	++++--+-
N = 13	++++-+++-

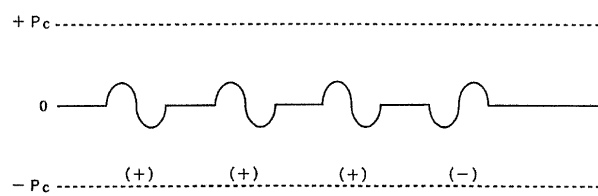
10



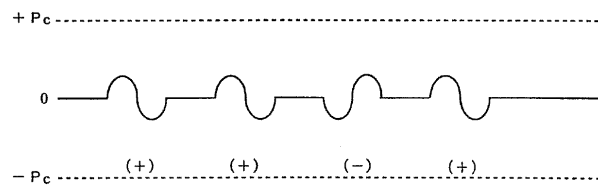
11



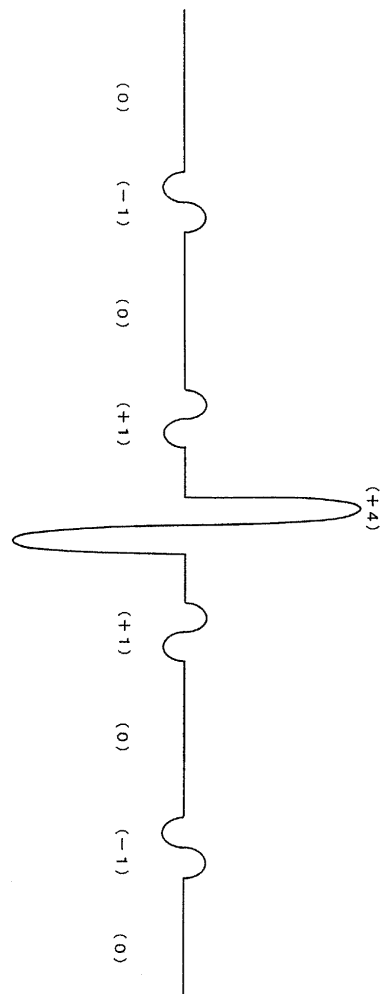
12



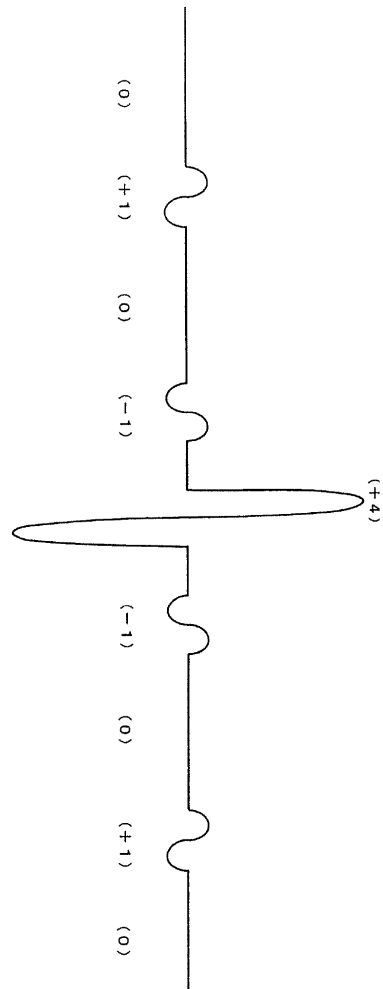
13



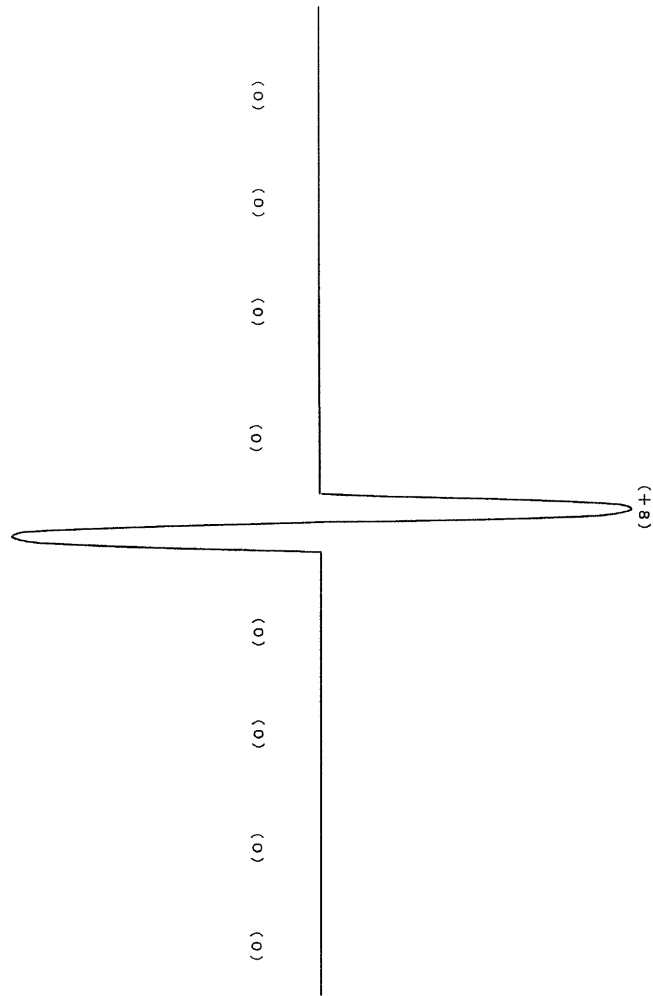
14



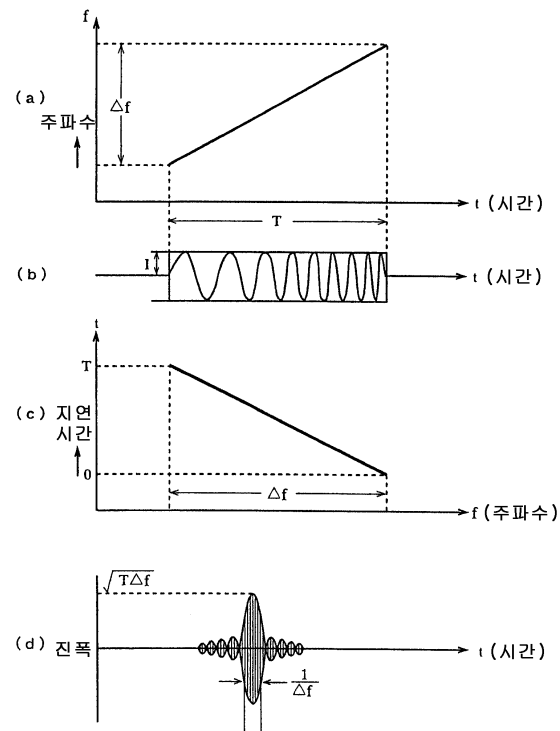
15



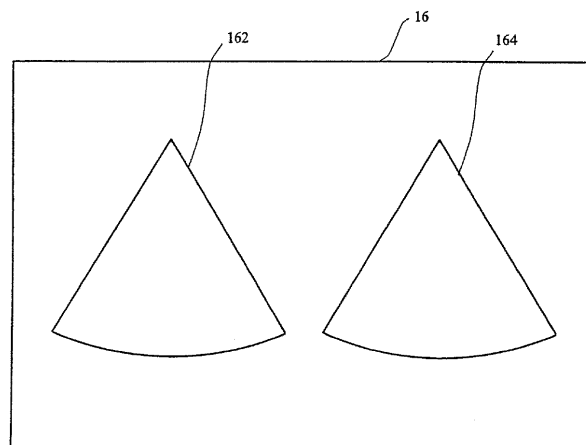
16



17



18



专利名称(译)	超声波发送/接收方法，超声波发送/接收装置，超声波成像方法和超声波成像装置		
公开(公告)号	KR1020020079560A	公开(公告)日	2002-10-19
申请号	KR1020020019416	申请日	2002-04-10
申请(专利权)人(译)	지이메디컬시스템즈글로벌테크놀로지컴파니엘엘씨		
当前申请(专利权)人(译)	지이메디컬시스템즈글로벌테크놀로지컴파니엘엘씨		
[标]发明人	HONDA MASAYOSHI		
发明人	HONDA,MASAYOSHI		
IPC分类号	G01N29/04 A61B8/00		
CPC分类号	A61B8/481 G01N2291/044		
代理人(译)	KIM, CHANG SE 张居正，KU SEONG		
优先权	2001112466 2001-04-11 JP		
外部链接	Espacenet		

摘要(译)

为了通过使用具有低声压的超声波而不破坏造影剂来获取高质量的超声波图像，使用具有不足以破坏造影剂并执行预定调制的声压的超声波，对回波接收信号执行脉冲压缩，并且基于脉冲压缩回波接收信号生成图像。 1

