



2 1  
 3 1  
 4 1  
 5 4 ASE  
 6  
 7 6  
 8  
 9  
 10

, PVDF( ( ) , PZT( :Pb(lead)zirconate titanate) , 가  
 . , 1 2 , 2 3  
 , , 1 가 ,  
 , ,  
 2 가 3 PZT PVD 2 2  
 . PZT PVDF 가 , 가 ,  
 , PZT PVDF 2 SN 가 , 가 가 , 가  
 , PZT

( , )  
 (FBG ) ( TAKAHASHI 「Underwater Acoustic Sensor with  
 Fiber Bragg Grating」 (OPTICAL REVIEW Vol.4, No.6(1997)pp.691 - 694 ) , (FPR  
 ) ( UNO 「Fabrication and Performance of a Fiber Optic Micro -  
 Probe for Megahertz Ultrasonic Field Measurements」 (T.IEE Japan, Vol.118 - E, No.11(1998)pp.487 - 492  
 )가

가 2 가 가 , 2  
 가

1 가  
 2 2  
 2 3

가 , 가 ,

가 , 가 가

가 , 2  
 3 2

1 (11) ,  
 (12) , (20) , (15) , (16) (11) 500  
 1600nm (12)  
 1 , 1 3 2 , 2  
 1 (12)

90°

(12)

(13)

(20) (21) , (22) ,  
 (22) (21) 가 (20) (11) (12) (20)  
 (12) , (16)

(16) CCD , MOS , PD( ) 2  
 (16) (20) (12) ,  
 (16) , (12) (15) (16)

, 2 (20)  
 (21) 가 (21) 2 , 2cm ,  
 (22) 2 n<sub>1</sub> (A) , n<sub>2</sub> (B)

(22) ( ) d , , m

$$2d \cdot \sin \theta = m \dots(2)$$

$$\theta = \lambda / 2$$

$$2d = m \dots(1)$$

(20) (d)가 , (20)가 , (22)  
 , 가 ( ) ,  
 (22) 가 ,  
 , 2

(21) (SiO<sub>2</sub>) BK7( ) (A)  
 (B) 10% , n<sub>1</sub> < n<sub>2</sub> , n<sub>1</sub> × 1.1  
 n<sub>2</sub> (A) (B) , 가 가  
 a<sub>2</sub>O<sub>5</sub>) , SiO<sub>2</sub> (Ti<sub>2</sub>O<sub>3</sub>) , SiO<sub>2</sub> (T  
 i<sub>2</sub>O<sub>3</sub> 2.0 , 10% , 1520nm SiO<sub>2</sub> 1.45, T  
 (A) (B) ( ) (22) 1/4  
 , (n) (t) , nt= /4가  
 (2) (22) 가 1/2 ,  
 B) , /4 (A) (B) , /2 (A) ( )  
 (A) (B)가 (21) ( , 100 )  
 , SiO<sub>2</sub>, SiO<sub>2</sub> Ti<sub>2</sub>O<sub>3</sub> 100 , 200  
 , 25% , 2.8dB/0.01nm 가  
 (22) (20)  
 , 3 ,  
 1 (1) (2) 가  
 (1) (11) (12) , (13) (12) , (11)  
 (12) (12) (2) (12) (15)  
 (2) (12) (16) , (15) (15) (16)  
 EDFA (Er) EDFA(Er - doped optica fiber amplifier)  
 1 2  
 가 (11) (20) (20)  
 20) , (20) (16) (16) 가 ( )  
 (16) , (16) 가 ,  
 SN 가 SN

1, 4 5, 4

ASE(amplified spontaneous emission)

(17) (broadband optical fiber amplifier)

ASE (17)

. ASE

Vol.82, No.7, pp.718 - 724(1999)

(4) 5 (4) ASE (17) ASE (17) (5)가 (7)가 (6)가 (5) (5) (4) (6)

4 ASE (17) (14) (14) 1 3 2 (14) 2 1 4 (14)

ASE (17) (14) (23)가 (23) (20) (23) (14) ASE (17) (23)

12) (23) (14) 가 (12) (20)

0.01nm/

(20) 가

가

4 가 ASE (17) (23)

(23) (20) (23) (20) (23) (20) (23)

(23) (20) (20) 가 가 (20) (20)

가

6

6

(30) (20) . 6 , (50) 2  
(40) (40) (40)  
(40) PZT( (30) (40)  
, PVDF( :polyvinyl difluoride) :Pb(lead)zirconate titanate) ( )  
) 가 , (30)  
가 , .

(50) (40) , (12) , (50) (50) 가 , 2  
(12) (15) (16)

, 1 (80) , (61) A/D (62) (60) , (70)  
(90) , (100) , 2 (110)

(62) (60) , (16) (61) , A/D

1 (80) (60) (90)  
, 2 3 (補間, interpolation),  
가 (100) , CRT LCD ,  
, 2 (110) (90)

(70) (16) (30) (61) ,  
, ,

, 7 , 7 ,  
(50) (40) , (120)

가 ,  
. 7

6 7 (30) (40)  
3 가 , (61)

(1)

8 , (40) , 2  
(50)  
(50)

가

3

(2)

9 , (40)  
(50)  
1

가 가

( )

가

(3)

10 , (40)

(50)

2

가

가 가

( )

가

2

1

가

가

2

3

(57)

1.

가 ,

가

(20);

(16)

2.				
1	,	(20)	2	
(22)				
3.				
2	,	2	가 10%	
4.				
2	,	(22)		1/4
5.				
3	,	(22)		1/4
6.				
4	,	(22)		1/2
7.				
5	,	(22)		1/2
8.				
1	,	(16)가 CCD, MOS	,	
9.				
1	,	(11)	(13)	
10.				
1	,	(11)	(20)	(1)
11.				
1	,	(20)	(16)	(
2)				

12.

1 , 500 1600nm (11)

13.

1 , ; (23)

14.

13 , ASE(amplified spontaneous emission)  
(17)

15.

13 , (23)가 (20)  
가 ; (23) (20) 가

16.

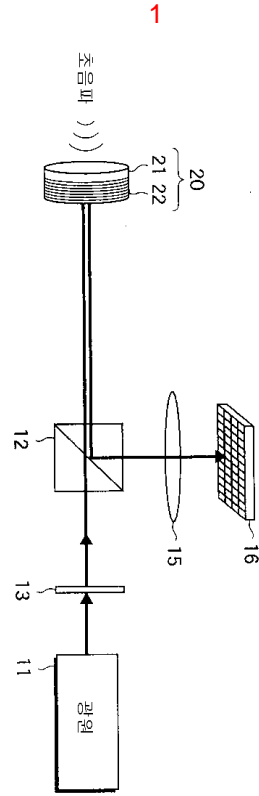
(40);  
가 (30);  
(20) , 가 , 가  
(16) ;  
(60);  
(70);  
(90);  
(100)

17.

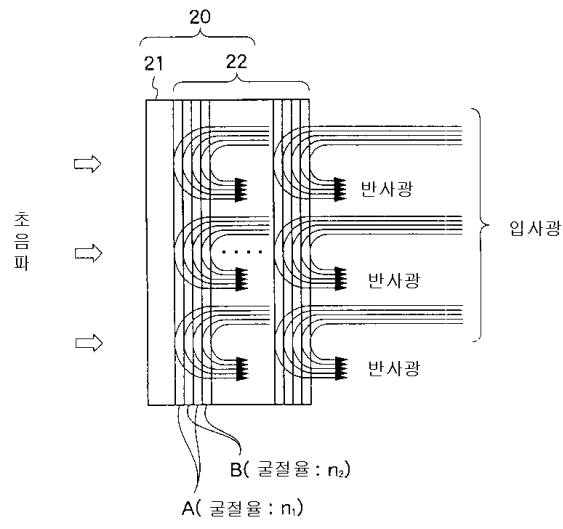
16 , (40) 가

18.

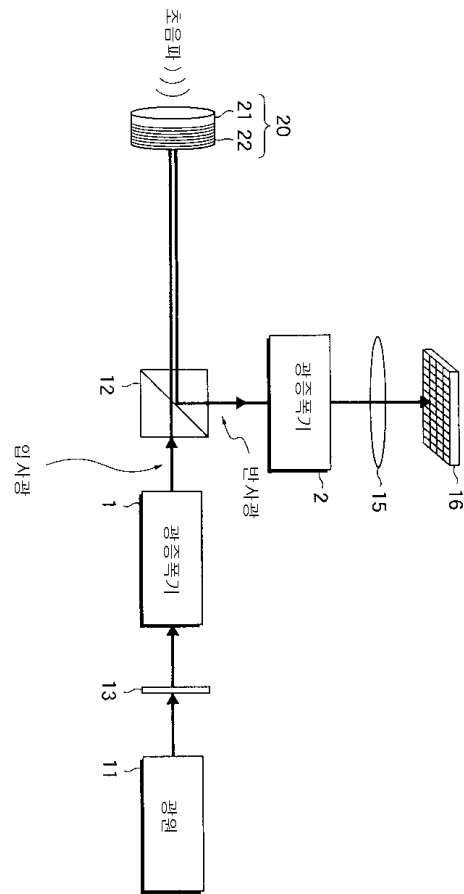
16	,	(20)	2
(22)	.		
19.			
18	,	2	가 10%
.			
20.			
18	,	(22)	1/4
.			
21.			
19	,	(22)	1/4
.			
22.			
20	,	(22)	1/2
.			
23.			
21	,	(22)	1/2
.			
24.			
16	,	(40) ,	(20)가
(120)	.		



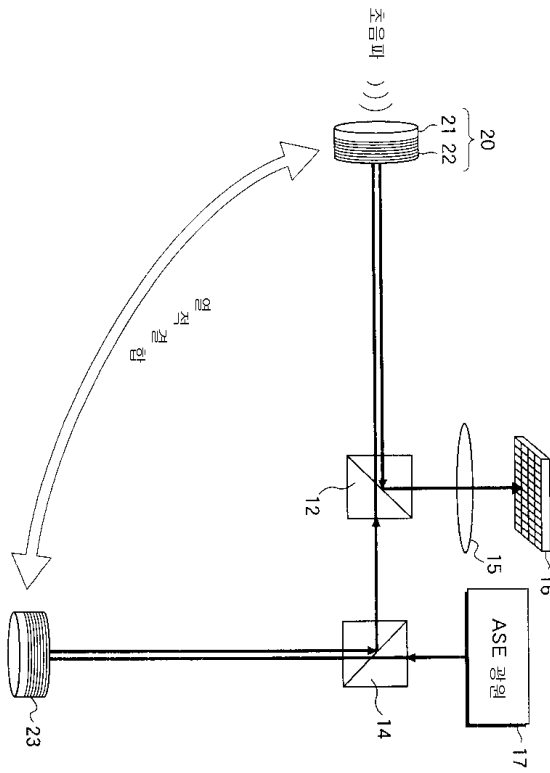
2



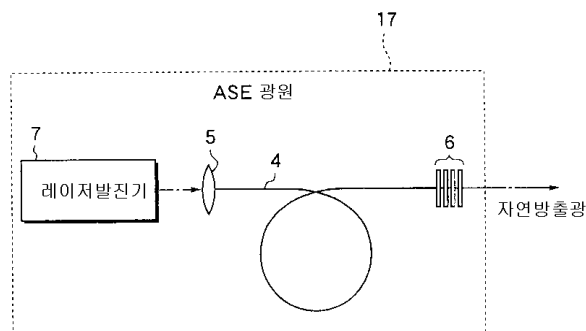
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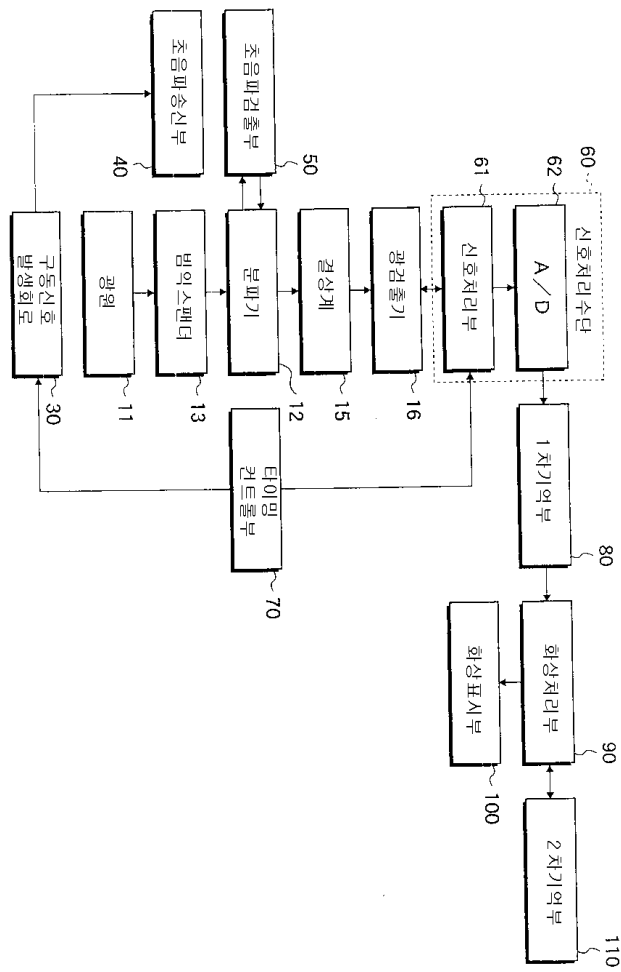
4



5

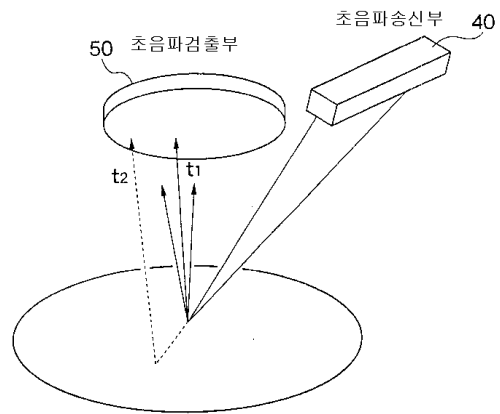


6

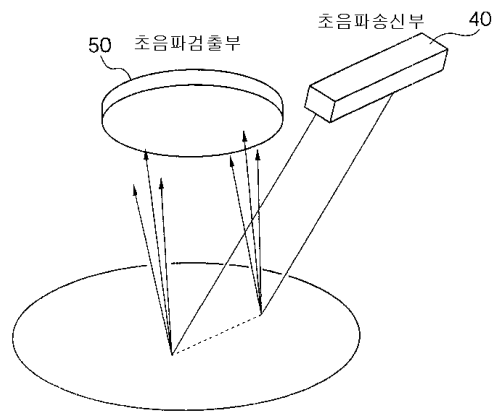




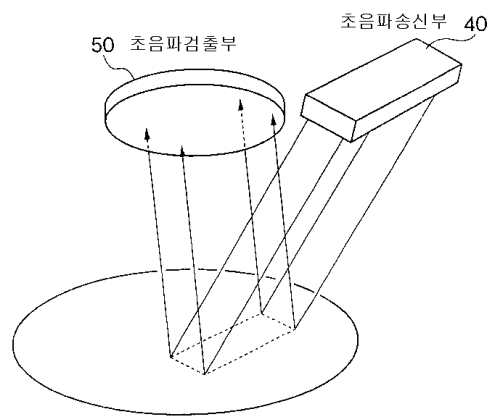
8



9



10



专利名称(译)	超声波接收装置和使用其的超声波诊断装置		
公开(公告)号	<a href="#">KR1020030027833A</a>	公开(公告)日	2003-04-07
申请号	KR1020020058969	申请日	2002-09-27
[标]申请(专利权)人(译)	富士胶片株式会社		
申请(专利权)人(译)	富士胶片有限公司		
当前申请(专利权)人(译)	富士胶片有限公司		
[标]发明人	OGAWA EIJI		
发明人	OGAWA,EIJI		
IPC分类号	H04R17/00 A61B5/00 G01S15/89 G01S7/52 A61B8/00 G02F1/11		
CPC分类号	G02F1/11 A61B5/0059 G01S7/5205 G02F2201/346 G01S15/8993 A61B8/00 A61B5/0097 G01S15/8968		
代理人(译)	HA, 桑KU HA, 杨郁		
优先权	2001296317 2001-09-27 JP		
外部链接	<a href="#">Espacenet</a>		

摘要(译)

不能引起串扰或电阻抗增加的超声波接收装置不需要多个微元件的电路，并且它将超声波信号检测到二维，而且成本低，能够使。该超声波接收装置具有用于接收超声波的接收面。并且，基于在超声波检测装置（20）的接收面的角位置中施加的超声来调制光，并且包括光学检测器（16）。光学检测器（16）是具有多个像素的光学检测器，并检测从超声波检测装置的相应位置输出的光。

