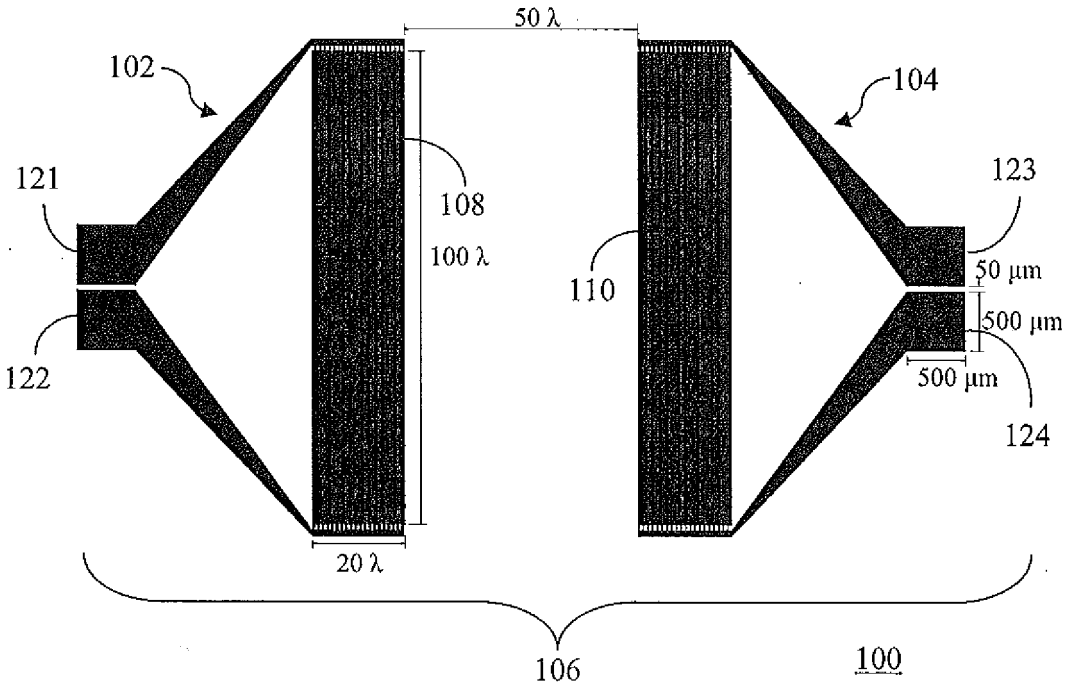

50 λ
102
104
121
108
100 λ
110
123
50 μm
500 μm
122
500 μm
124
20 λ
106
100

FIG. 1A

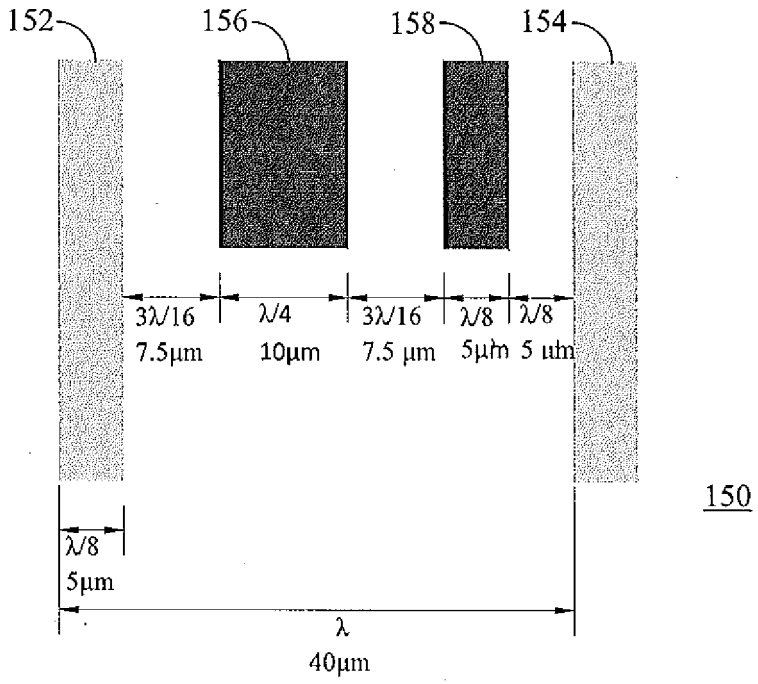

152
156
158
154
3λ/16
7.5μm
λ/4
10μm
3λ/16
7.5 μm
λ/8
5μm
λ/8
5 μm
150
λ/8
5μm
λ
40μm

FIG. 1B

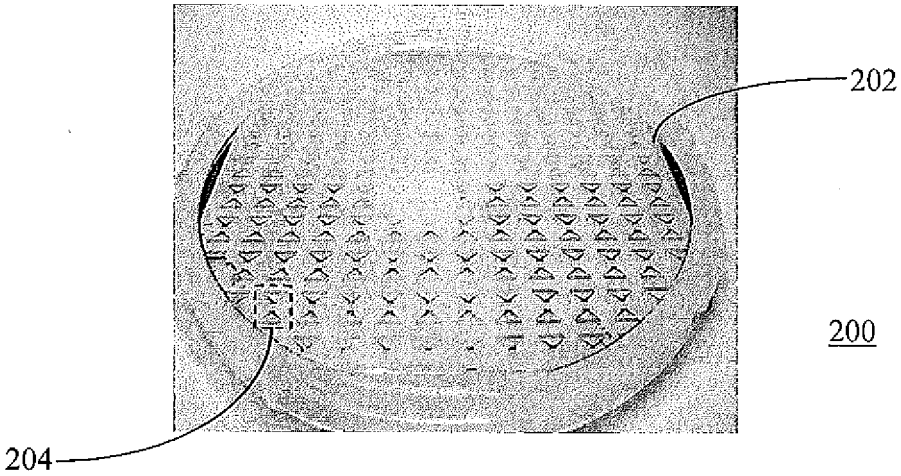


FIG. 2A

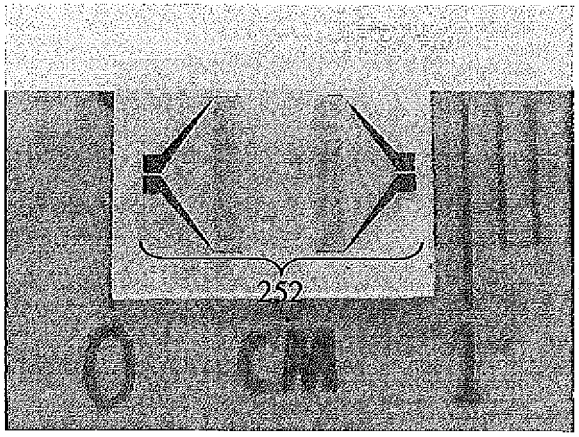


FIG. 2B

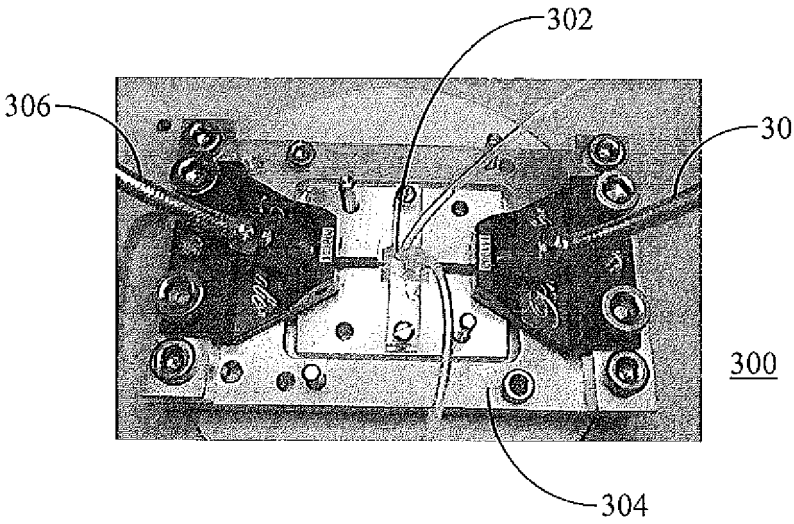


FIG. 3A

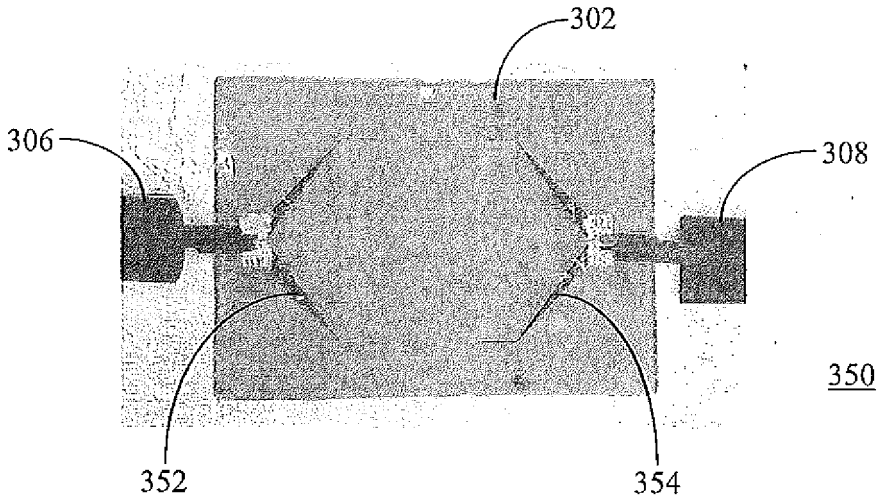


FIG. 3B

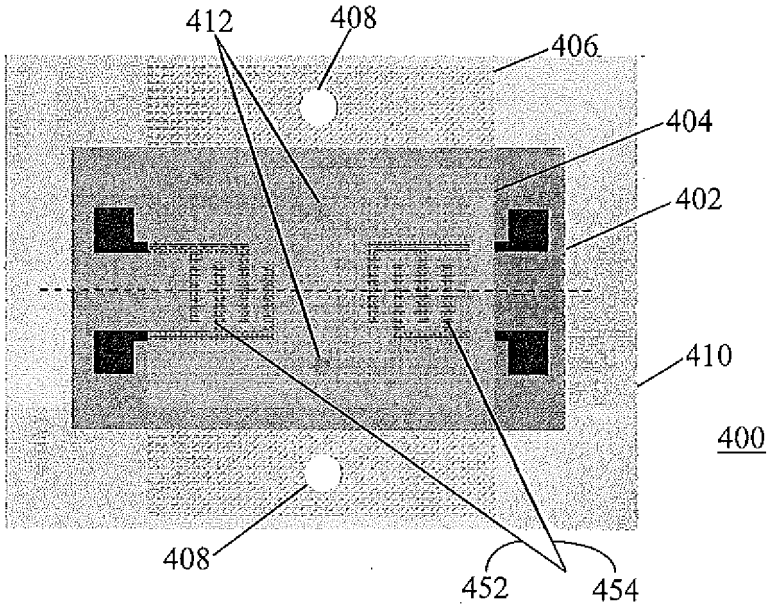

412
408
406
404
402
410
400
408
452
454

FIG. 4A

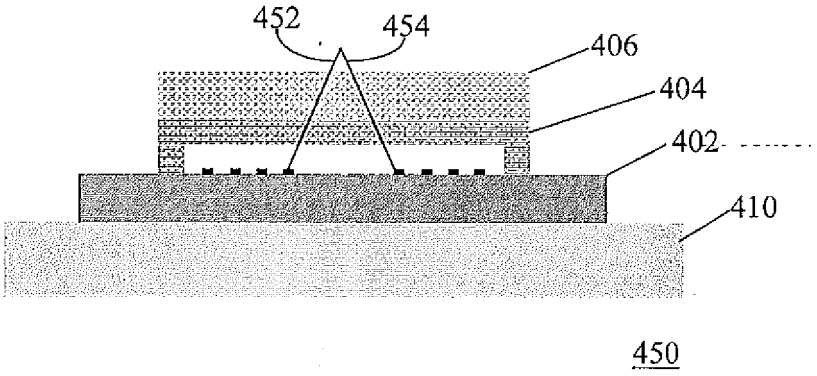
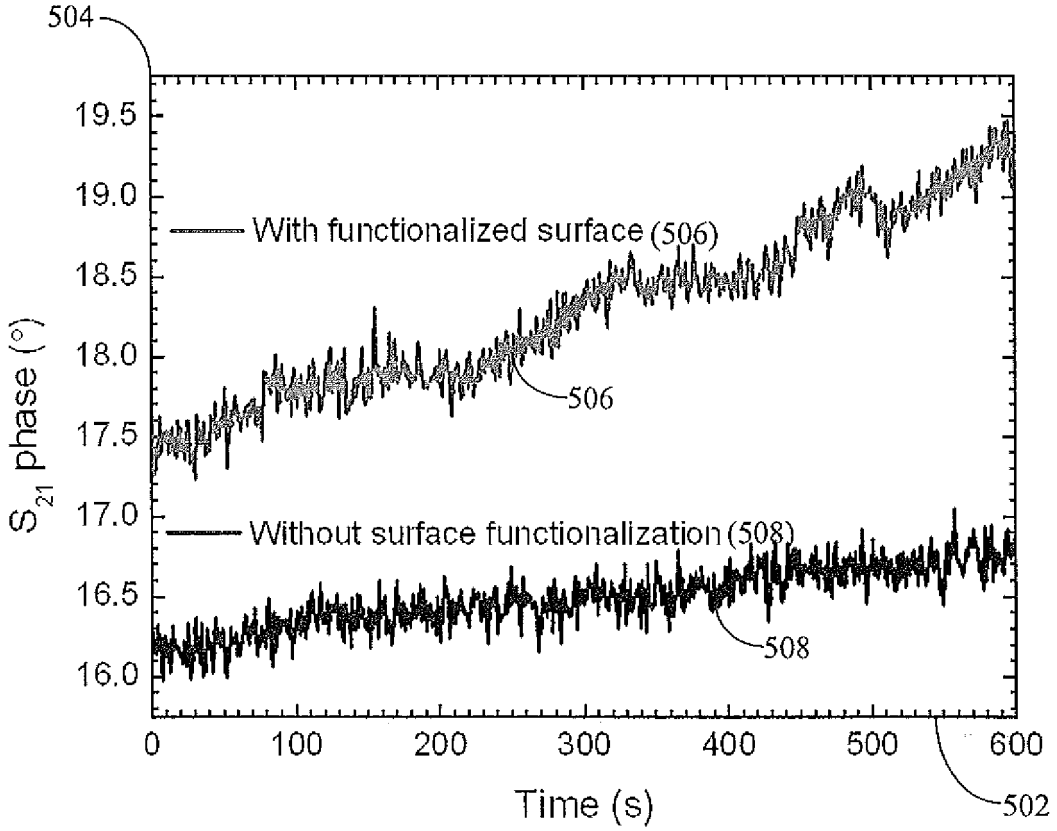

452
454
406
404
402
410
450

FIG. 4B


504
19.5
19.0
18.5
18.0
17.5
17.0
16.5
16.0
S_{21} phase (°)
With functionalized surface (506)
506
Without surface functionalization (508)
508
0
100
200
300
400
500
600
Time (s)
502

500

FIG. 5

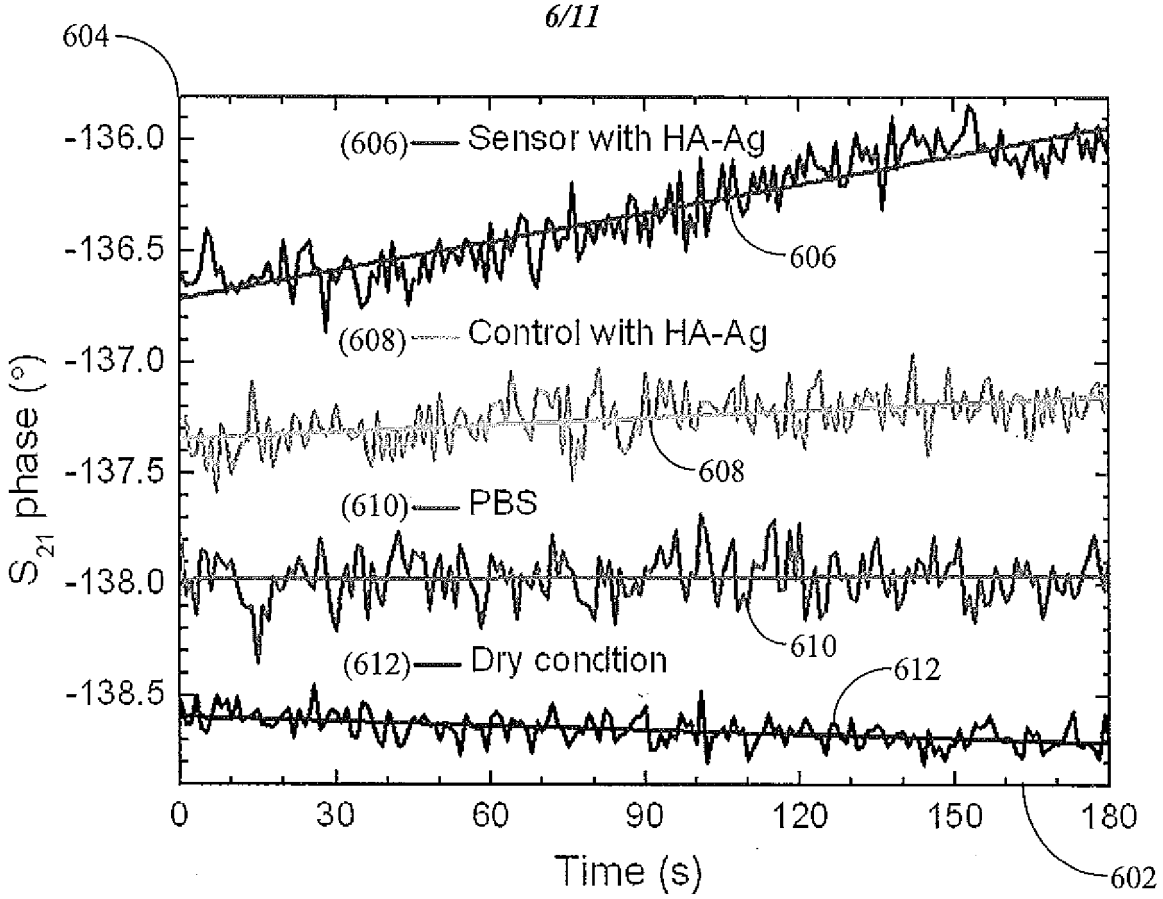

604
-136.0
-136.5
-137.0
-137.5
-138.0
-138.5
S_{21} phase (°)
(606) Sensor with HA-Ag
606
(608) Control with HA-Ag
608
(610) PBS
610
(612) Dry condition
612
0
30
60
90
120
150
180
Time (s)
602
600

FIG. 6

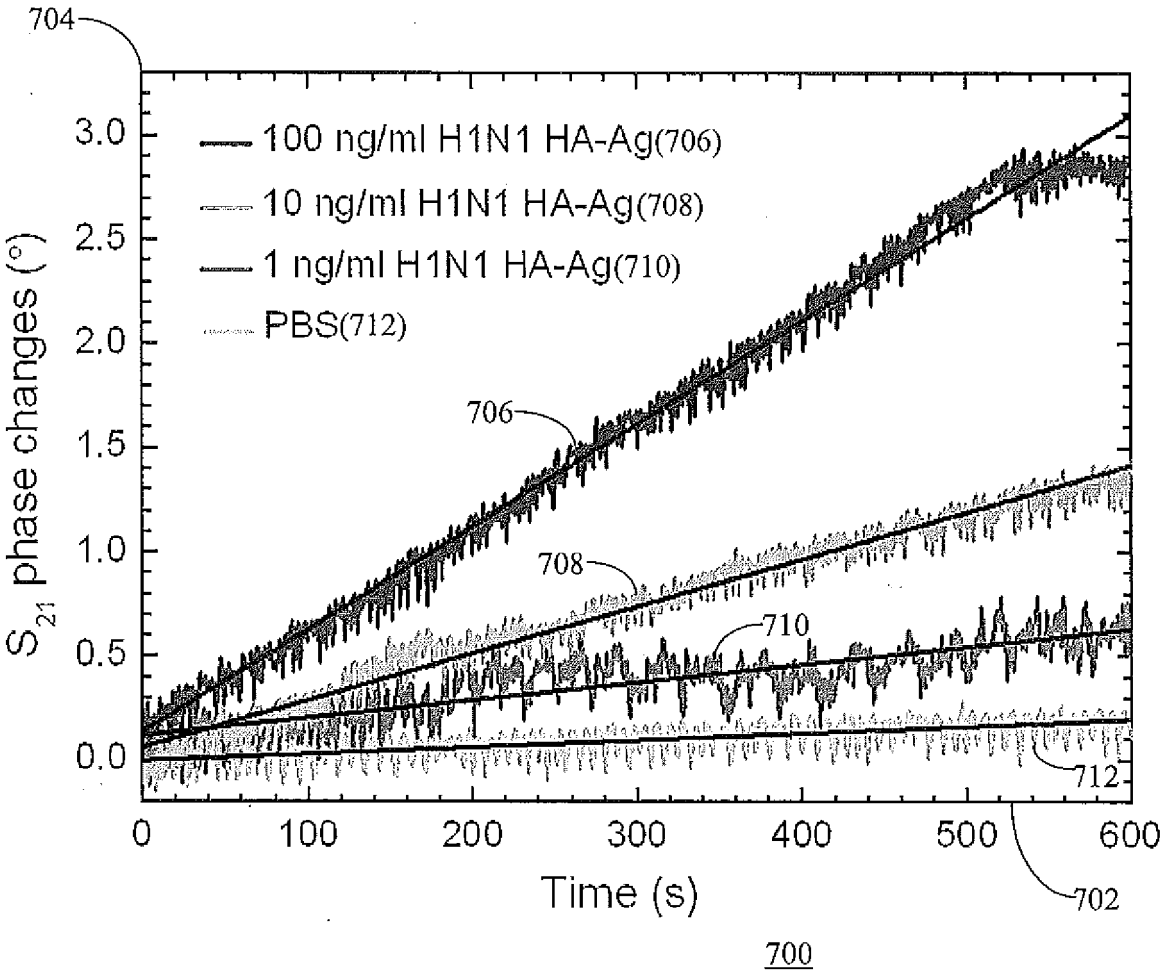

704
100 ng/ml H1N1 HA-Ag(706)
10 ng/ml H1N1 HA-Ag(708)
1 ng/ml H1N1 HA-Ag(710)
PBS(712)
706
708
710
712
S_{21} phase changes (°)
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0
100
200
300
400
500
600
Time (s)
702
700

FIG. 7

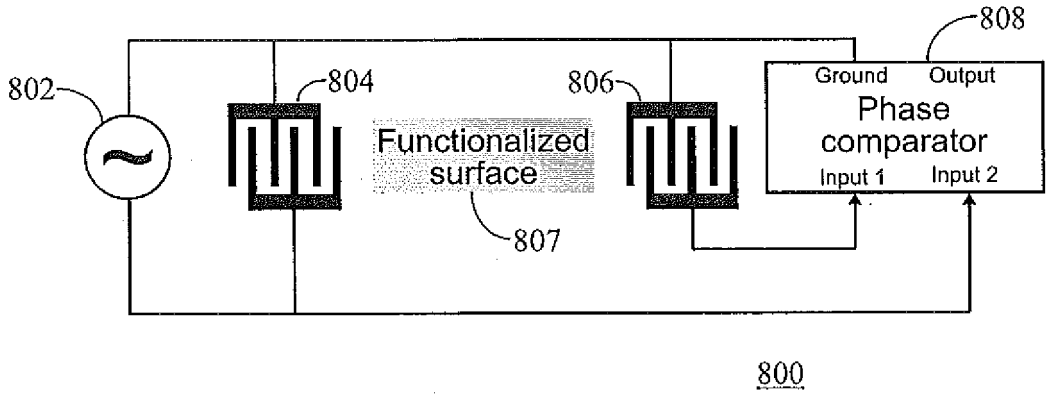

802
804
806
808
Ground
Output
Phase comparator
Input 1
Input 2
Functionalized surface
807
800

FIG. 8

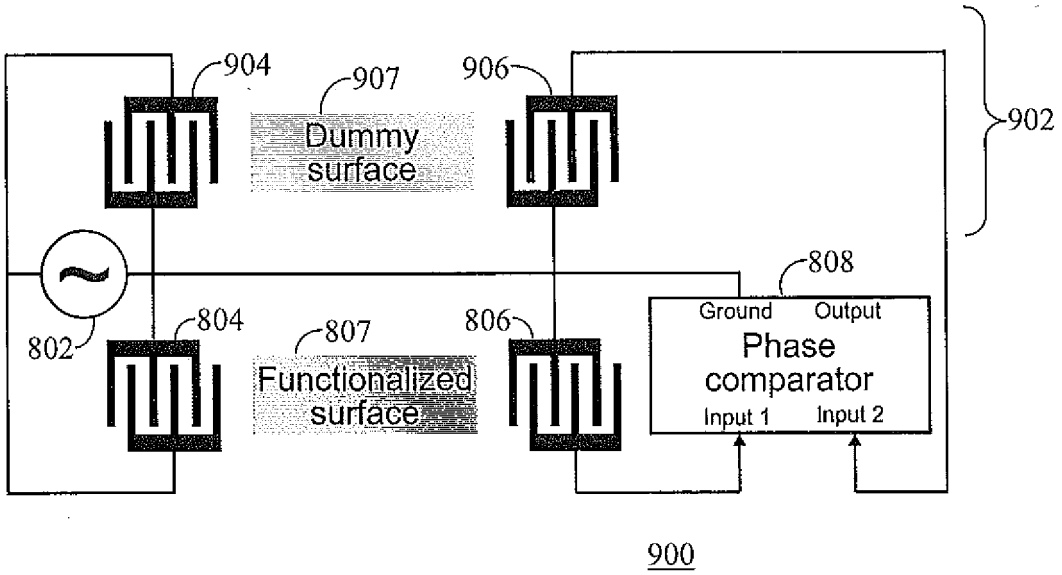

904
907
906
902
Dummy surface
808
802
804
807
806
Ground
Output
Phase comparator
Input 1
Input 2
Functionalized surface
900

FIG. 9

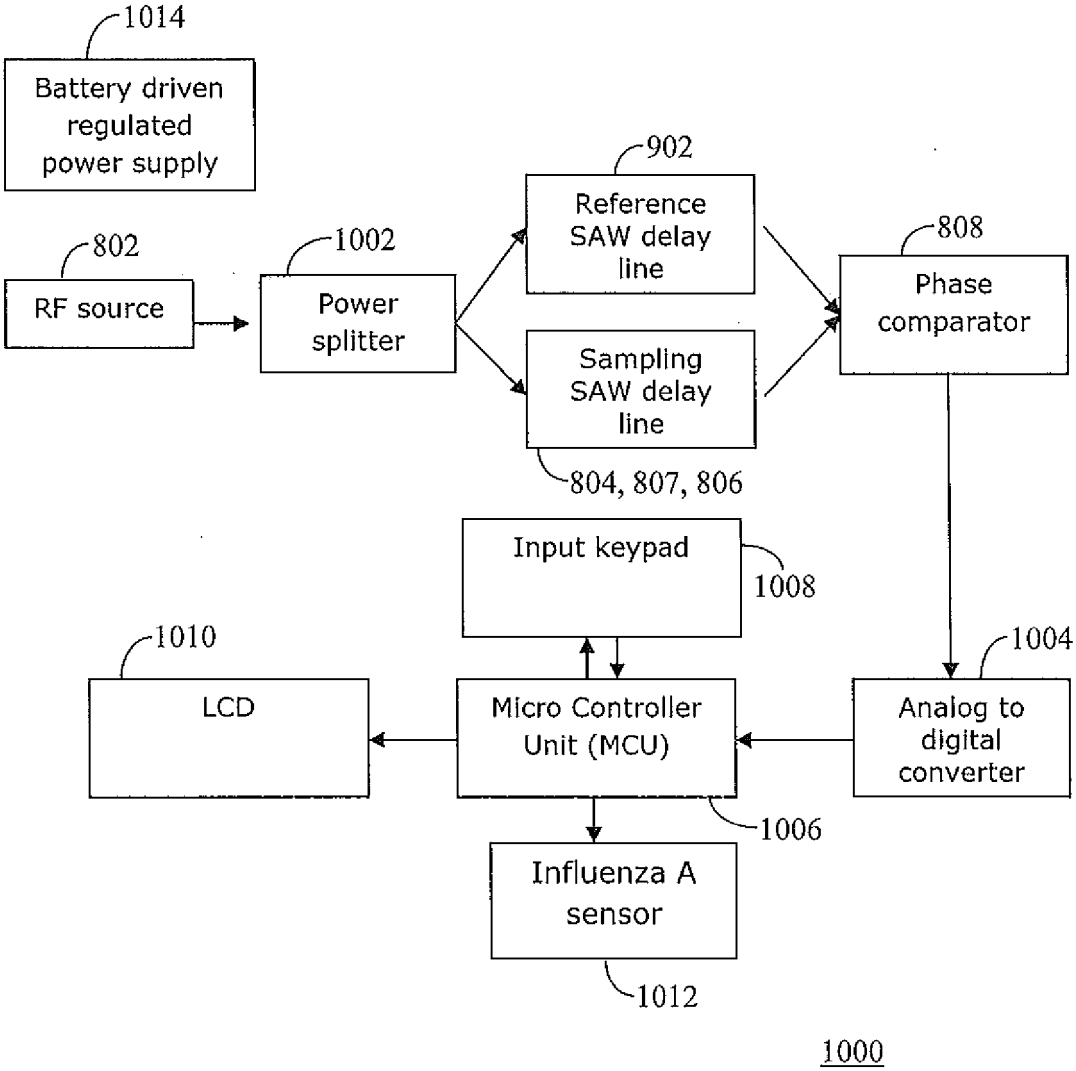

1014
Battery driven regulated power supply
902
Reference SAW delay line
808
Phase comparator
802
RF source
1002
Power splitter
Sampling SAW delay line
804, 807, 806
Input keypad
1008
1010
LCD
Micro Controller Unit (MCU)
1004
Analog to digital converter
1006
Influenza A sensor
1012
1000

FIG. 10

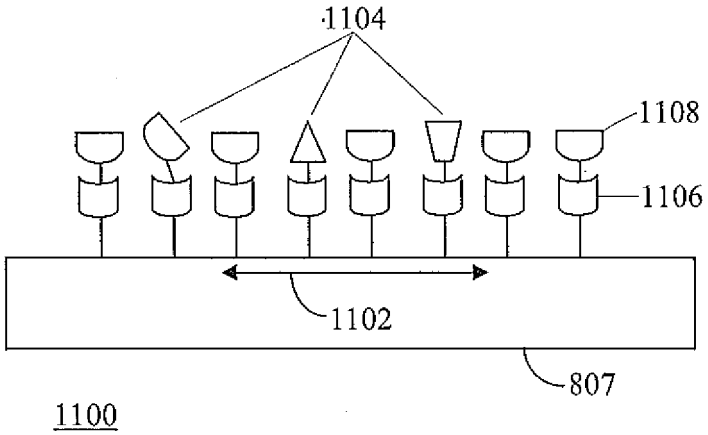


FIG. 11A

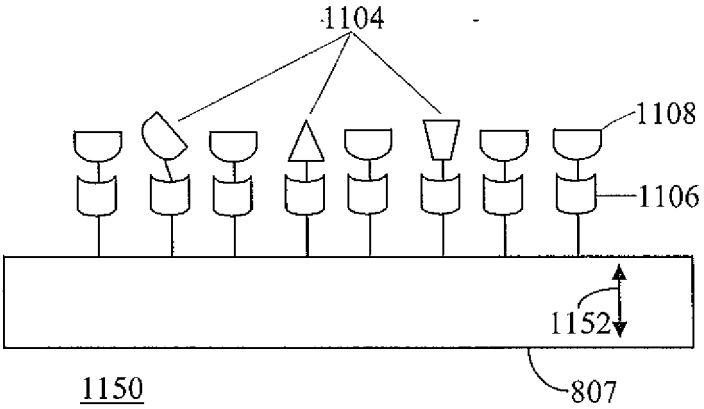


FIG. 11B

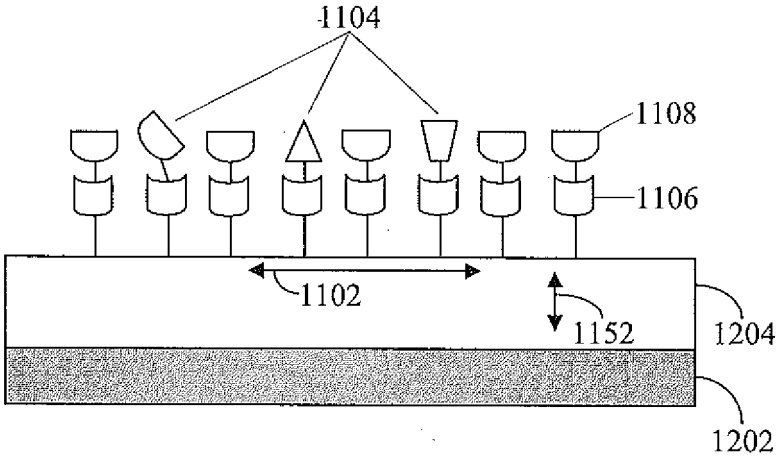


FIG. 12