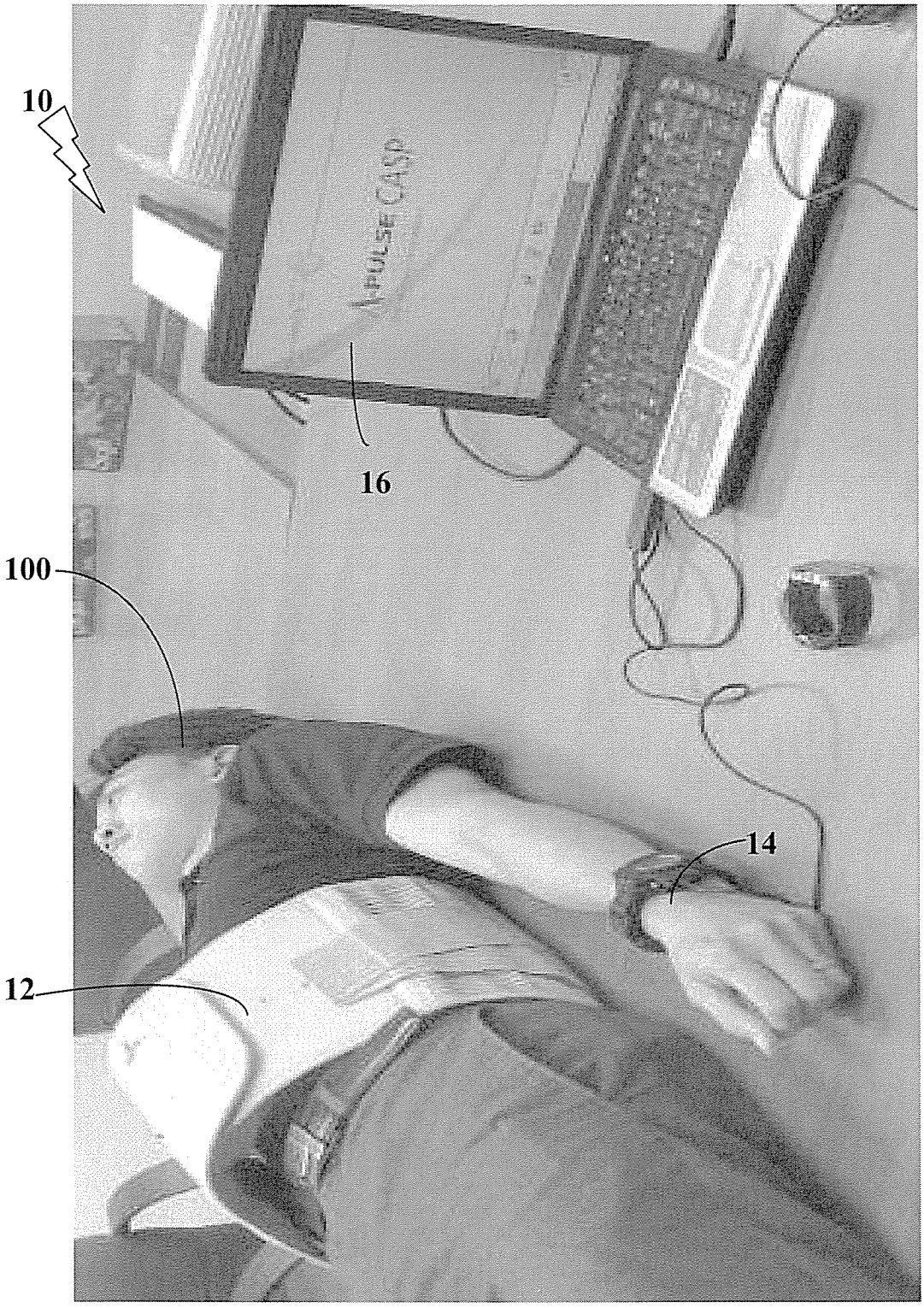
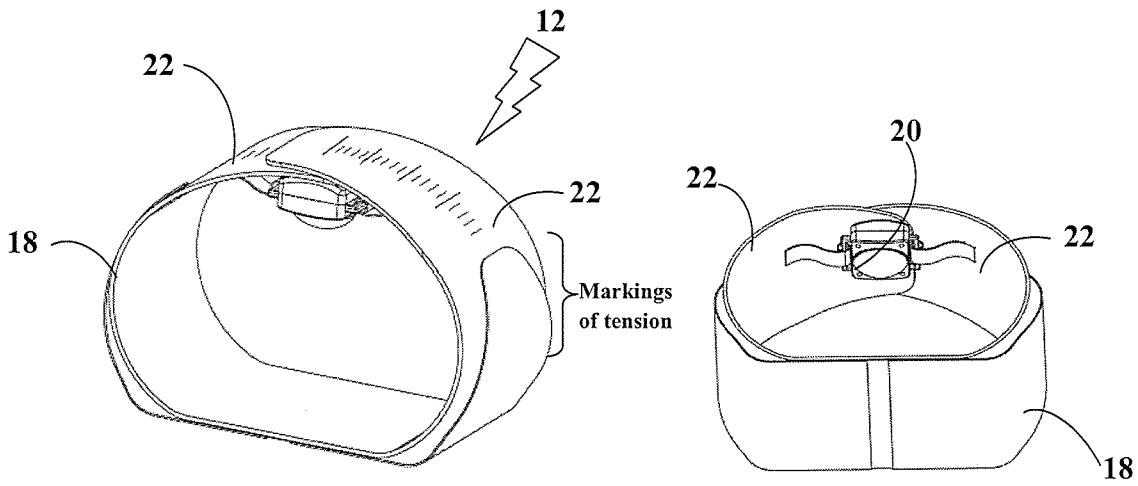
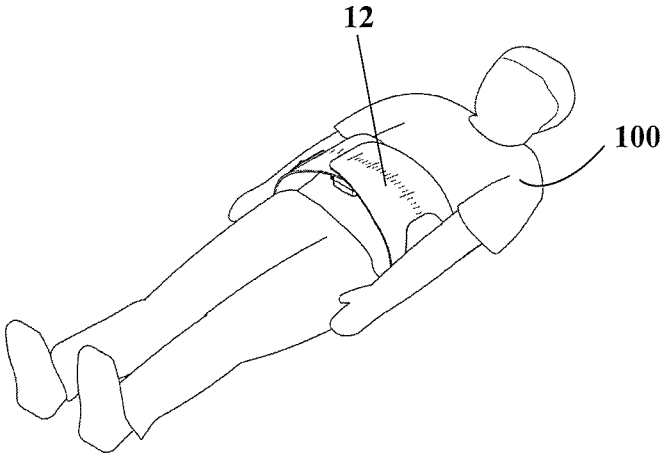


Fig. 1



(a) (b)



(c)

Fig. 2

Fig. 3a

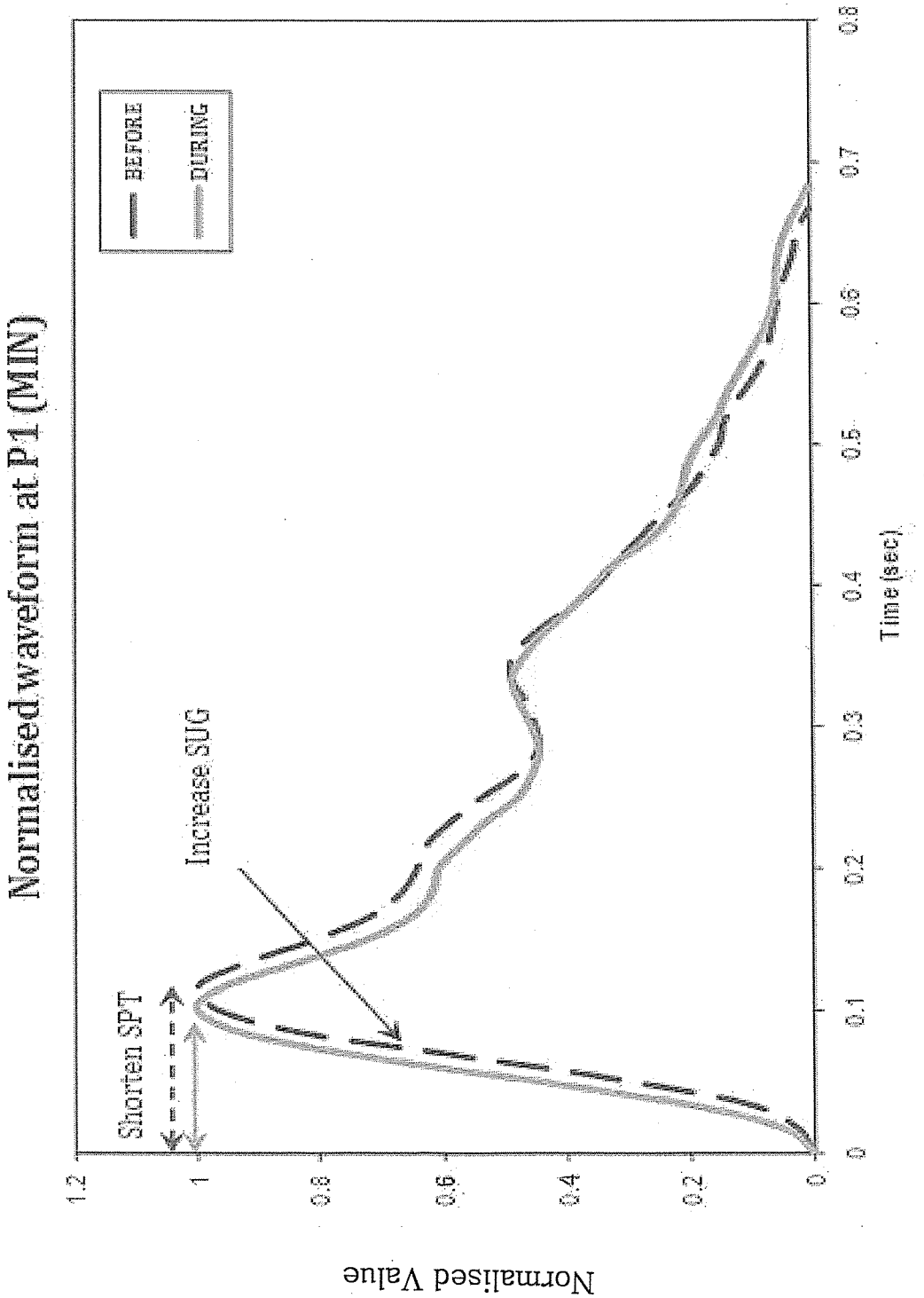

Normalised waveform at P1 (MIN)
BEFORE
DURING
Shorten SPT
Increase SUG
Normalised Value
Time (sec)
0
0.2
0.4
0.6
0.8
1
1.2
0.1
0.3
0.5
0.7

Fig. 3b

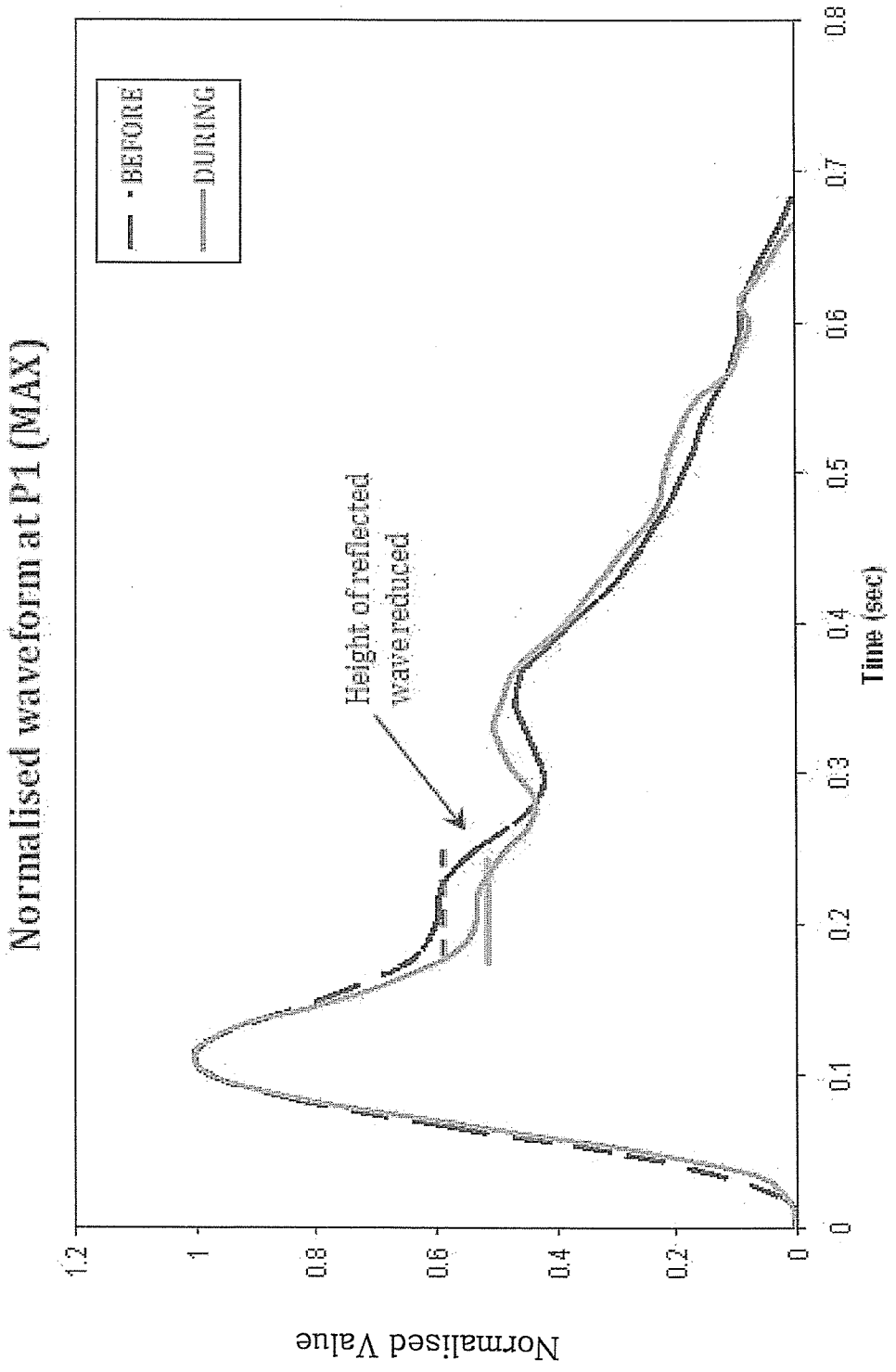
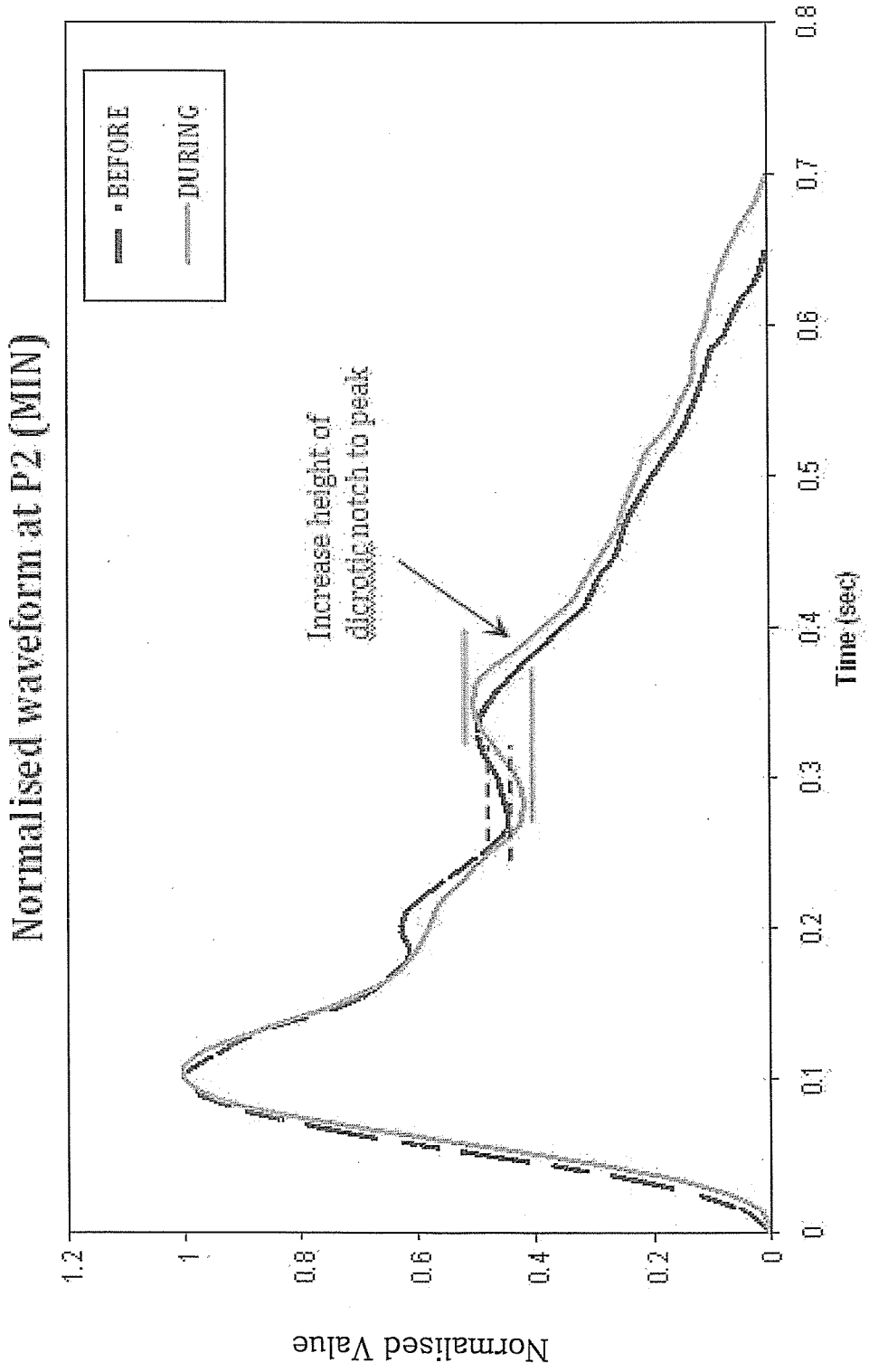

Normalised waveform at P1 (MAX)
BEFORE
DURING
Height of reflected wave reduced
Normalised Value
Time (sec)
0
0.2
0.4
0.6
0.8
1
1.2
0.1
0.3
0.5
0.7

Fig. 3c


Normalised waveform at P2 (MIN)
BEFORE
DURING
Increase height of dicrotic notch to peak
Normalised Value
Time (sec)
0
0.2
0.4
0.6
0.8
1
1.2
0.1
0.3
0.5
0.7

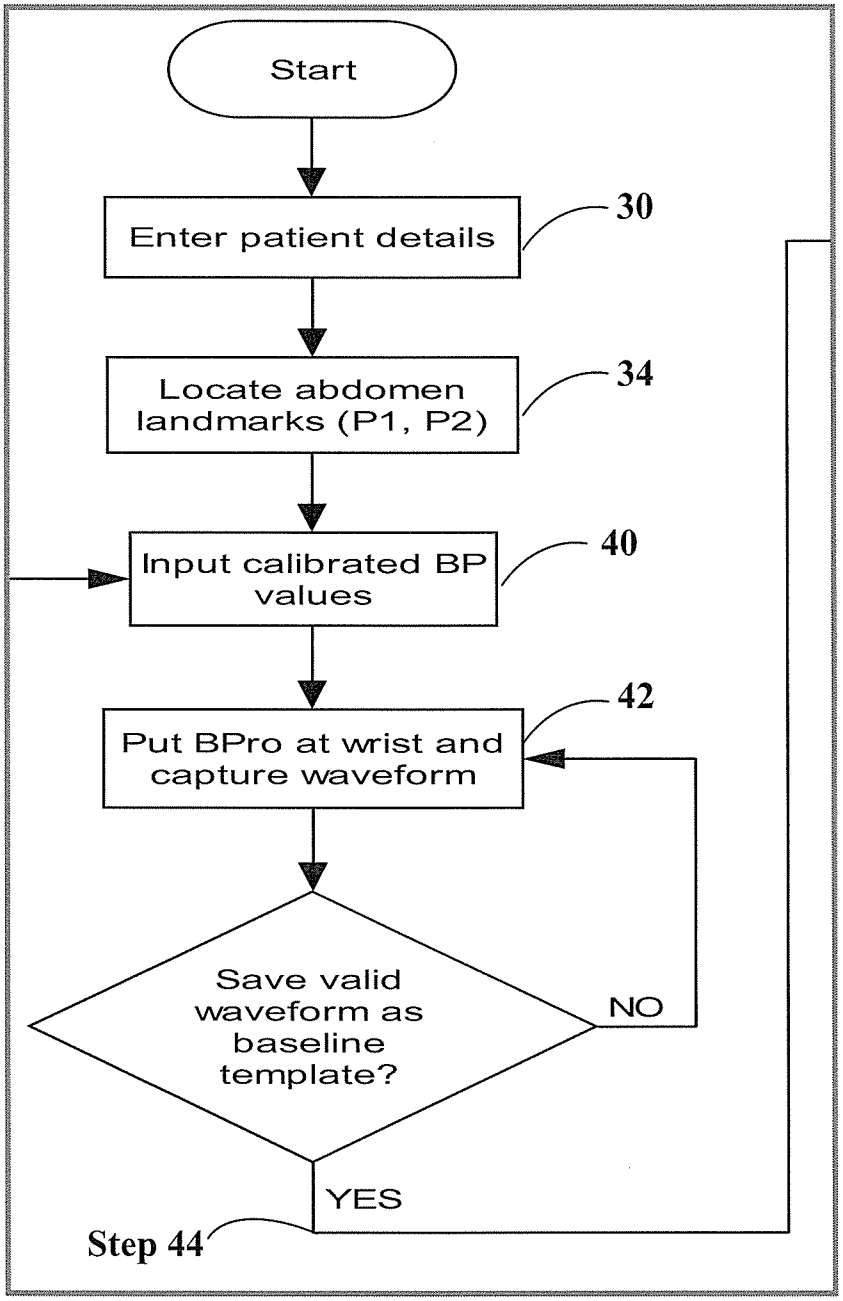

Start
Enter patient details
30
Locate abdomen landmarks (P1, P2)
34
Input calibrated BP values
40
Put BPro at wrist and capture waveform
42
Save valid waveform as baseline template?
NO
YES
Step 44

Fig. 4

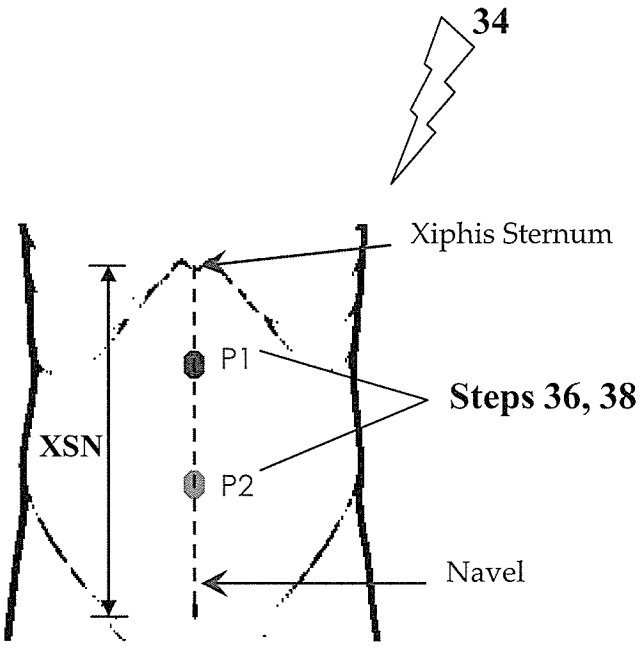


Fig. 5

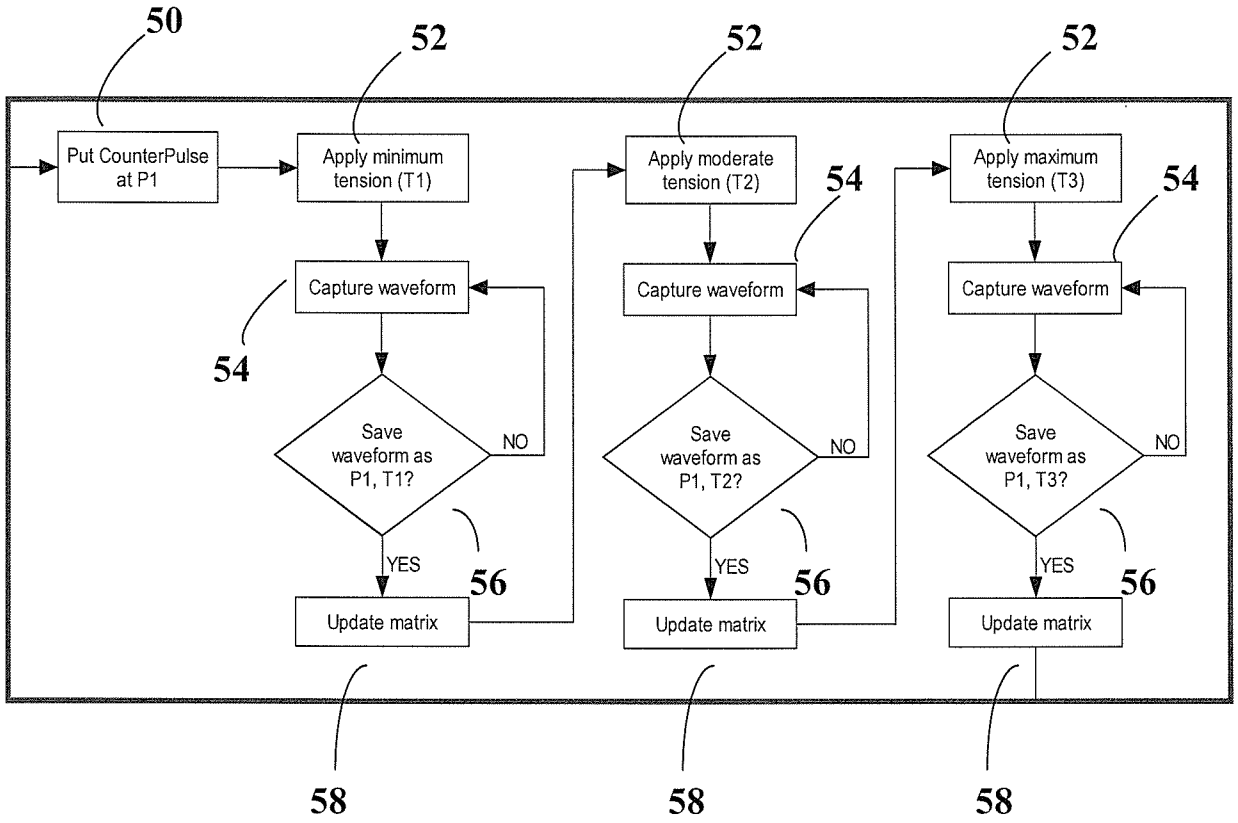

50
52
52
52
Put CounterPulse at P1
Apply minimum tension (T1)
Apply moderate tension (T2)
Apply maximum tension (T3)
54
54
54
Capture waveform
Capture waveform
Capture waveform
Save waveform as P1, T1?
Save waveform as P1, T2?
Save waveform as P1, T3?
NO
NO
NO
YES
YES
YES
56
56
56
Update matrix
Update matrix
Update matrix
58
58
58

Fig. 6

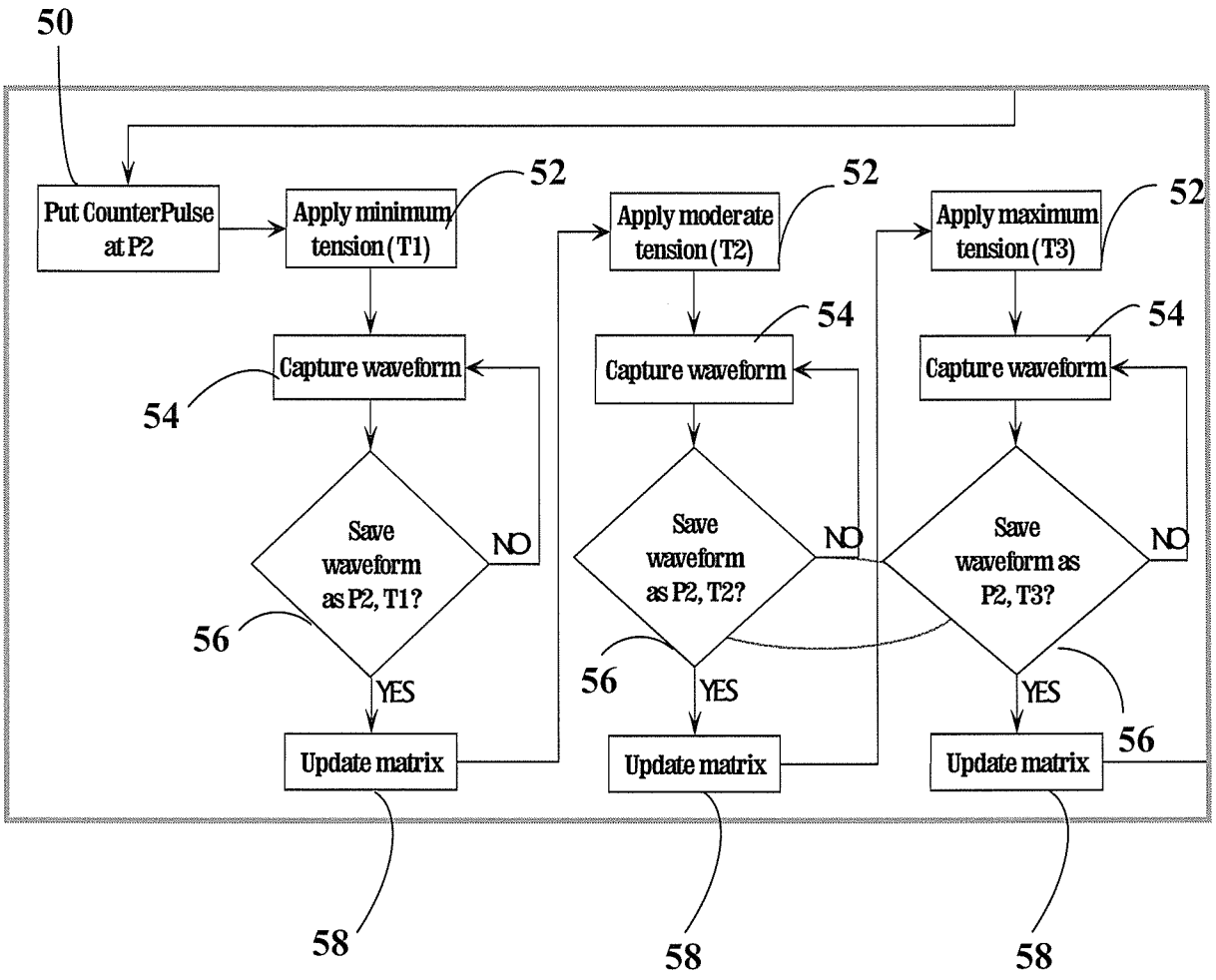

50
Put CounterPulse at P2
Apply minimum tension (T1)
52
Capture waveform
54
Save waveform as P2, T1?
NO
56
YES
Update matrix
58
Apply moderate tension (T2)
52
Capture waveform
54
Save waveform as P2, T2?
NO
56
YES
Update matrix
58
Apply maximum tension (T3)
52
Capture waveform
54
Save waveform as P2, T3?
NO
56
YES
Update matrix
58

Fig. 7

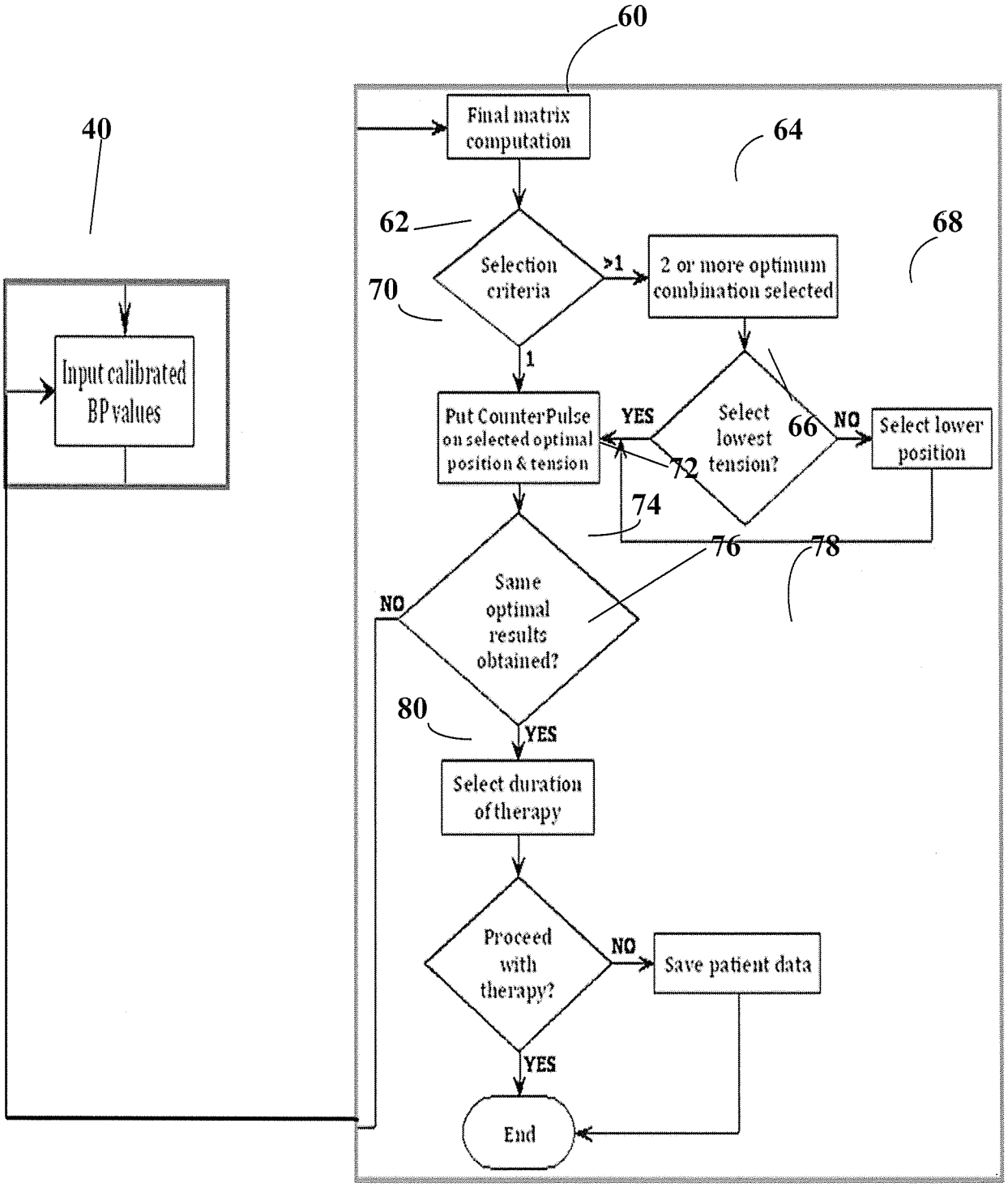

60
40
Final matrix computation
64
62
Selection criteria
>1
2 or more optimum combination selected
68
70
1
Input calibrated BP values
Put CounterPulse on selected optimal position & tension
YES
Select lowest tension?
66
NO
Select lower position
72
74
76
78
Same optimal results obtained?
NO
80
YES
Select duration of therapy
Proceed with therapy?
NO
Save patient data
YES
End

Fig. 8

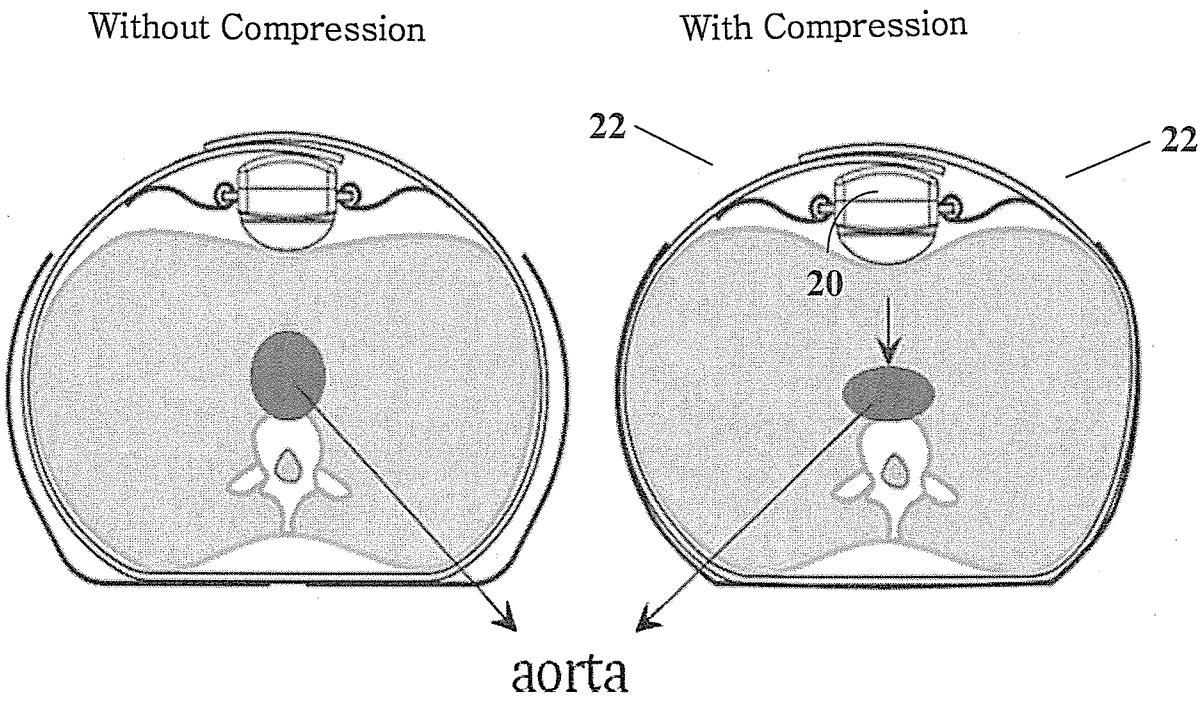


Fig. 9

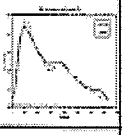
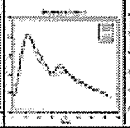
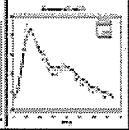
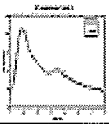
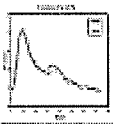
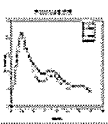
Percentage change	P1			P2			Ideal
	T1	T2	T3	T1	T2	T3	
Waveforms							—
SPT	17	0	-12.0	20.5	-17	0	↓
SUG	-6	0	26.6	-17.1	-28.1	-2.9	↑
Height of reflected wave	-7.8	-12.6	-5.6	-5.7	0.7	9.7	↓
Net dicrotic notch to peak height	191.7	111.8	106.3	-16.7	-6.7	14.8	↑
PR	4.9	-2.4	7.5	-4.5	7.3	23.3	↓

Fig. 10

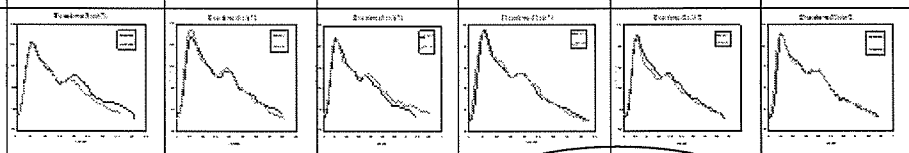
Percentage change	P1			P2			Ideal
	T1	T2	T3	T1	T2	T3	
Waveforms							–
SPT	0	0	0	-14.5	-14.5	0	↓
SUG	-5.7	0	0	14.1	11.1	2.6	↑
Height of reflected wave	2.4	4.1	0.1	6.1	-3.7	-1.7	↓
Net dicrotic notch-peak height	-50.0	9.7	-28.1	15.8	27.8	45.5	↑
PR	12.3	-2.7	-13.0	-1.4	2.9	1.5	↓

Fig. 11

Percentage Change	1/3 XPN		2/3 XPN		Ideal
	MIN	MAX	MIN	MAX	
SPT	-14.5	0	0	0	↓
SUG	35.0	0	0	-6.3	↑
Height of reflected wave	0.7	-3.5	-2.2	0.1	↓
Net Height of dicrotic notch to peak	7.1	53.3	68.8	75	↑
PR	-2.2	2.3	-6.5	-9.1	↓

Fig. 12

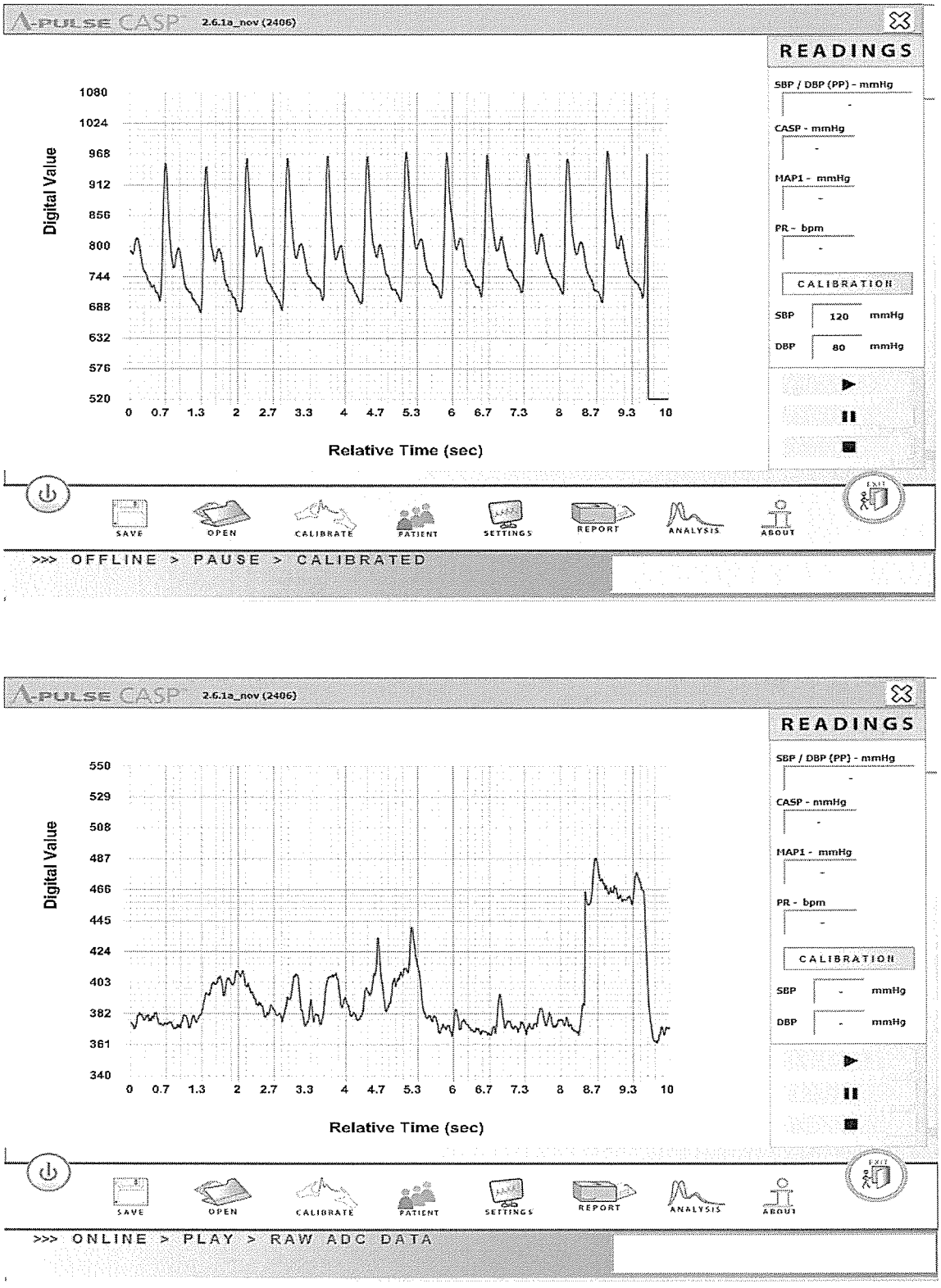

A-PULSE CASP 2.6.1a_nov (2406)
READINGS
SBP / DBP (PP) - mmHg
CASP - mmHg
MAP1 - mmHg
PR - bpm
CALIBRATION
SBP 120 mmHg
DBP 80 mmHg
Digital Value
1080
1024
968
912
856
800
744
688
632
576
520
0 0.7 1.3 2 2.7 3.3 4 4.7 5.3 6 6.7 7.3 8 8.7 9.3 10
Relative Time (sec)
SAVE
OPEN
CALIBRATE
PATIENT
SETTINGS
REPORT
ANALYSIS
ABOUT
EXIT
>>> OFFLINE > PAUSE > CALIBRATED
A-PULSE CASP 2.6.1a_nov (2406)
READINGS
SBP / DBP (PP) - mmHg
CASP - mmHg
MAP1 - mmHg
PR - bpm
CALIBRATION
SBP - mmHg
DBP - mmHg
Digital Value
550
529
508
487
466
445
424
403
382
361
340
0 0.7 1.3 2 2.7 3.3 4 4.7 5.3 6 6.7 7.3 8 8.7 9.3 10
Relative Time (sec)
SAVE
OPEN
CALIBRATE
PATIENT
SETTINGS
REPORT
ANALYSIS
ABOUT
EXIT
>>> ONLINE > PLAY > RAW ADC DATA

Fig. 13

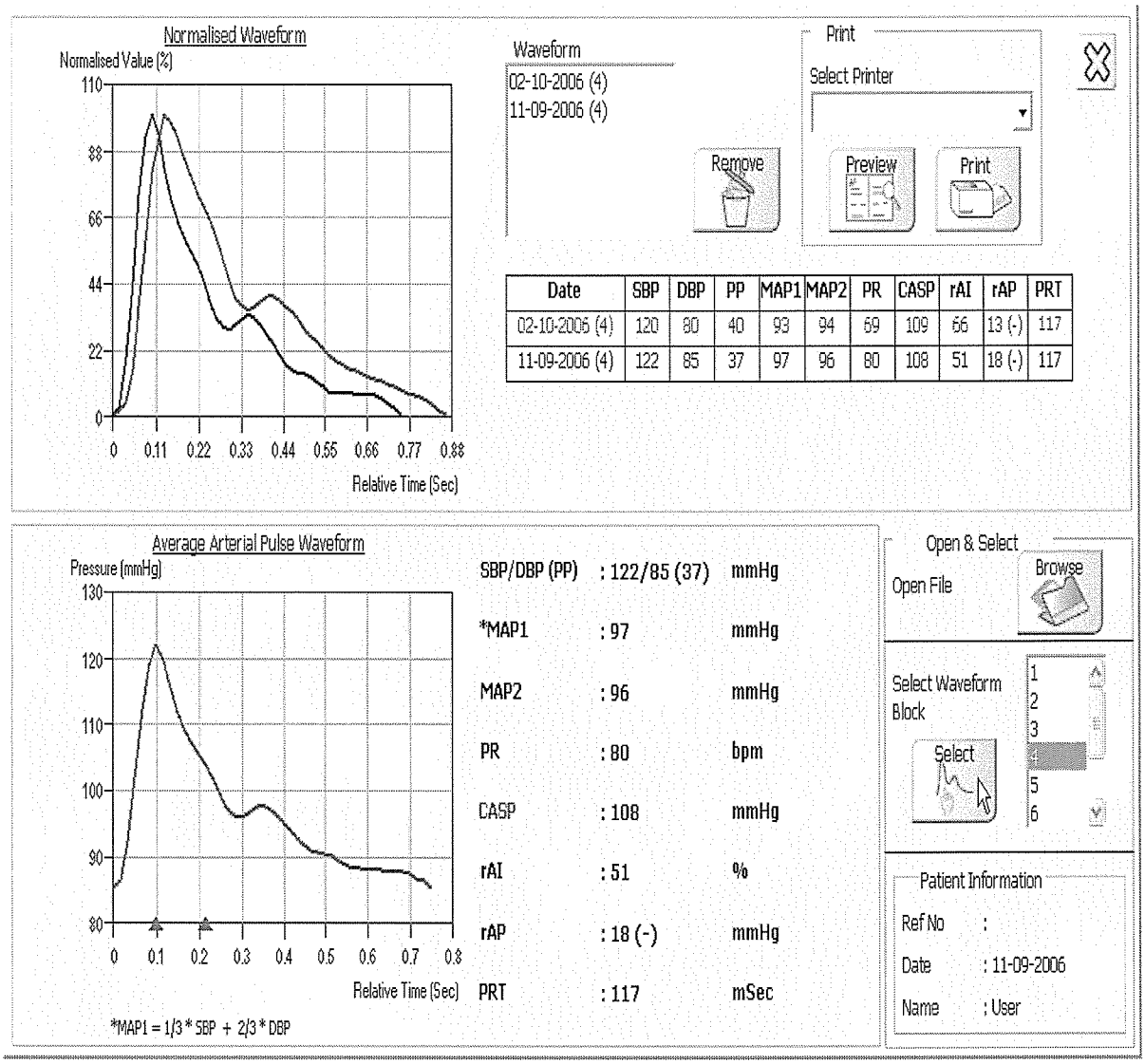

Normalised Waveform
Normalised Value (%)
110
88
66
44
22
0
0 0.11 0.22 0.33 0.44 0.55 0.66 0.77 0.88
Relative Time (Sec)
Waveform
02-10-2006 (4)
11-09-2006 (4)
Remove
Print
Select Printer
Preview
Print
Date SBP DBP PP MAP1 MAP2 PR CASP rAI rAP PRT
02-10-2006 (4) 120 80 40 93 94 69 109 66 13 (-) 117
11-09-2006 (4) 122 85 37 97 96 80 108 51 18 (-) 117
Average Arterial Pulse Waveform
Pressure (mmHg)
130
120
110
100
90
80
0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8
Relative Time (Sec)
*MAP1 = 1/3 * SBP + 2/3 * DBP
SBP/DBP (PP) : 122/85 (37) mmHg
*MAP1 : 97 mmHg
MAP2 : 96 mmHg
PR : 80 bpm
CASP : 108 mmHg
rAI : 51 %
rAP : 18 (-) mmHg
PRT : 117 mSec
Open & Select
Open File
Browse
Select Waveform Block
Select
1
2
3
4
5
6
Patient Information
Ref No :
Date : 11-09-2006
Name : User

Fig. 14