#### Heart's Trace:

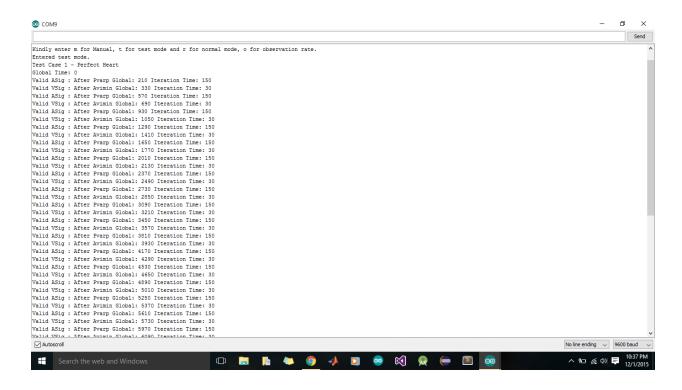
Kindly enter m for Manual, t for test mode and r for normal mode, o for observation rate. Entered test mode.

Test Case 1 - Perfect Heart

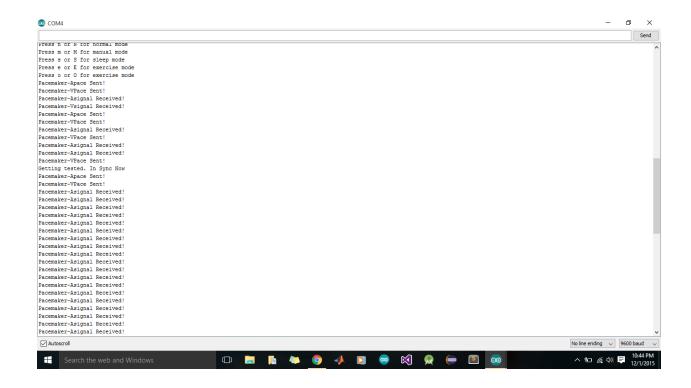
Global Time: 0

Valid ASig: After Pvarp Global: 210 Iteration Time: 150 Valid VSig: After Avimin Global: 330 Iteration Time: 30 Valid ASig: After Pvarp Global: 570 Iteration Time: 150 Valid VSig: After Avimin Global: 690 Iteration Time: 30 Valid ASig: After Pvarp Global: 930 Iteration Time: 150 Valid VSig: After Avimin Global: 1050 Iteration Time: 30 Valid ASig: After Pvarp Global: 1290 Iteration Time: 150 Valid VSig: After Avimin Global: 1410 Iteration Time: 30 Valid ASig: After Pvarp Global: 1650 Iteration Time: 150 Valid VSig: After Avimin Global: 1770 Iteration Time: 30 Valid ASig: After Pvarp Global: 2010 Iteration Time: 150 Valid VSig: After Avimin Global: 2130 Iteration Time: 30 Valid ASig: After Pvarp Global: 2370 Iteration Time: 150 Valid VSig: After Avimin Global: 2490 Iteration Time: 30 Valid ASig: After Pvarp Global: 2730 Iteration Time: 150 Valid VSig: After Avimin Global: 2850 Iteration Time: 30 Valid ASig: After Pvarp Global: 3090 Iteration Time: 150 Valid VSig: After Avimin Global: 3210 Iteration Time: 30 Valid ASig: After Pvarp Global: 3450 Iteration Time: 150 Valid VSig: After Avimin Global: 3570 Iteration Time: 30 Valid ASig: After Pvarp Global: 3810 Iteration Time: 150 Valid VSig: After Avimin Global: 3930 Iteration Time: 30 Valid ASig: After Pvarp Global: 4170 Iteration Time: 150 Valid VSig: After Avimin Global: 4290 Iteration Time: 30 Valid ASig: After Pvarp Global: 4530 Iteration Time: 150 Valid VSig: After Avimin Global: 4650 Iteration Time: 30 Valid ASig: After Pvarp Global: 4890 Iteration Time: 150 Valid VSig: After Avimin Global: 5010 Iteration Time: 30 Valid ASig: After Pvarp Global: 5250 Iteration Time: 150 Valid VSig: After Avimin Global: 5370 Iteration Time: 30 Valid ASig: After Pvarp Global: 5610 Iteration Time: 150 Valid VSig: After Avimin Global: 5730 Iteration Time: 30 Valid ASig: After Pvarp Global: 5970 Iteration Time: 150 Valid VSig: After Avimin Global: 6090 Iteration Time: 30 Valid ASig: After Pvarp Global: 6330 Iteration Time: 150 Valid VSig: After Avimin Global: 6450 Iteration Time: 30 Valid ASig: After Pvarp Global: 6690 Iteration Time: 150 Valid VSig: After Avimin Global: 6810 Iteration Time: 30

Valid ASig: After Pvarp Global: 7050 Iteration Time: 150 Valid VSig: After Avimin Global: 7170 Iteration Time: 30 Valid ASig: After Pvarp Global: 7410 Iteration Time: 150 Valid VSig: After Avimin Global: 7530 Iteration Time: 30 Valid ASig: After Pvarp Global: 7770 Iteration Time: 150 Valid VSig: After Avimin Global: 7890 Iteration Time: 30 Valid ASig: After Pvarp Global: 8130 Iteration Time: 150 Valid VSig: After Avimin Global: 8250 Iteration Time: 30 Valid ASig: After Pvarp Global: 8490 Iteration Time: 150 Valid VSig: After Avimin Global: 8610 Iteration Time: 30 Valid ASig: After Pvarp Global: 8850 Iteration Time: 150 Valid VSig: After Avimin Global: 8970 Iteration Time: 30 Valid ASig: After Avimin Global: 9210 Iteration Time: 30 Valid VSig: After Avimin Global: 9210 Iteration Time: 30 Valid VSig: After Avimin Global: 9330 Iteration Time: 30



Pacemaker's trace:



Press n or N for normal mode

Press m or M for manual mode

Press s or S for sleep mode

Press e or E for exercise mode

Press o or O for exercise mode

Pacemaker-Apace Sent!

Pacemaker-VPace Sent!

Pacemaker-Asignal Received!

Pacemaker-Vsignal Received!

Pacemaker-Apace Sent!

Pacemaker-VPace Sent!

Pacemaker-Asignal Received!

Pacemaker-VPace Sent!

Pacemaker-Asignal Received!

Pacemaker-Asignal Received!

Pacemaker-VPace Sent!

Getting tested. In Sync Now

Pacemaker-Apace Sent!

Pacemaker-VPace Sent!

Pacemaker-Asignal Received!

Pacemaker-VPace Sent!

Pacemaker-Asignal Received!

## Test case 2:

In this mode, there is no trace since the heart doesn't function.

## Test case 3:

Heart's trace:

Test Case 3 - Valid ASignal and Vpace received Heart Valid ASig: After Pvarp Global: 9319 Iteration Time: 150

Vpace Received: After URI and AVI max Global: 10044 Iteration Time: 634

Valid ASig: After Pvarp Global: 10310 Iteration Time: 150

Vpace Received: After URI and AVI max Global: 11364 Iteration Time: 964

Valid ASig: After Pvarp Global: 11630 Iteration Time: 150

Vpace Received: After URI and AVI max Global: 17334 Iteration Time: 5614

Valid ASig: After Pvarp Global: 17600 Iteration Time: 150

Vpace Received: After URI and AVI max Global: 18384 Iteration Time: 694

Valid ASig: After Pvarp Global: 18650 Iteration Time: 150

Vpace Received: After URI and AVI max Global: 19494 Iteration Time: 754

Valid ASig: After Pvarp Global: 19760 Iteration Time: 150

Vpace Received: After URI and AVI max Global: 20634 Iteration Time: 784

Valid ASig: After Pvarp Global: 20900 Iteration Time: 150

Vpace Received: After URI and AVI max Global: 21894 Iteration Time: 904

Valid ASig: After Pvarp Global: 22160 Iteration Time: 150

Vpace Received: After URI and AVI max Global: 25464 Iteration Time: 3214

Valid ASig: After Pvarp Global: 25730 Iteration Time: 150

Vpace Received: After URI and AVI max Global: 26754 Iteration Time: 934

Valid ASig: After Pvarp Global: 27020 Iteration Time: 150

Vpace Received: After URI and AVI max Global: 30324 Iteration Time: 3214

Valid ASig: After Pvarp Global: 30590 Iteration Time: 150

Vpace Received: After URI and AVI max Global: 32514 Iteration Time: 1834

Valid ASig: After Pvarp Global: 32780 Iteration Time: 150

Vpace Received: After URI and AVI max Global: 33774 Iteration Time: 904

Valid ASig: After Pvarp Global: 34040 Iteration Time: 150

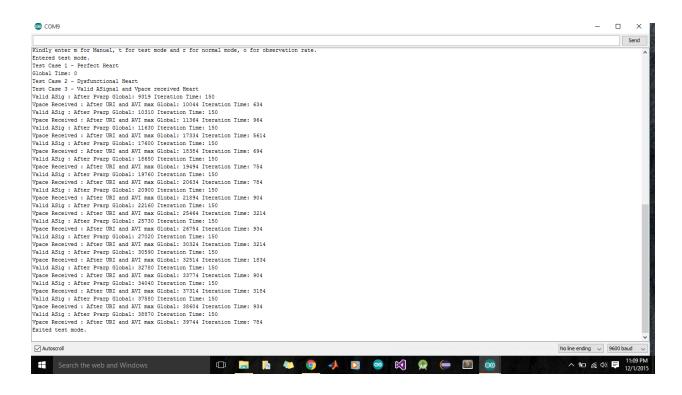
Vpace Received: After URI and AVI max Global: 37314 Iteration Time: 3184

Valid ASig: After Pvarp Global: 37580 Iteration Time: 150

Vpace Received: After URI and AVI max Global: 38604 Iteration Time: 934

Valid ASig: After Pvarp Global: 38870 Iteration Time: 150

Vpace Received: After URI and AVI max Global: 39744 Iteration Time: 784



### Test case 4:

#### Heart:

Test case 4- Valid V signal is sent and Apace is received

APace received: After LRI Global: 25609 Iteration Time: 1049

Valid VSig: After Avimax and URI Global: 25759 Iteration Time: 59

APace received: After LRI Global: 26749 Iteration Time: 869

Valid VSig: After Avimax and URI Global: 26899 Iteration Time: 59

APace received : After LRI Global: 28014 Iteration Time: 994

Valid VSig: After Avimax and URI Global: 28159 Iteration Time: 59

APace received: After LRI Global: 29123 Iteration Time: 843

Valid VSig: After Avimax and URI Global: 29269 Iteration Time: 59

APace received: After LRI Global: 30289 Iteration Time: 899

Valid VSig: After Avimax and URI Global: 30439 Iteration Time: 59

APace received: After LRI Global: 31639 Iteration Time: 1079

Valid VSig: After Avimax and URI Global: 31789 Iteration Time: 59

APace received: After LRI Global: 33023 Iteration Time: 1113

Valid VSig: After Avimax and URI Global: 33169 Iteration Time: 59

APace received: After LRI Global: 34309 Iteration Time: 1019

Valid VSig: After Avimax and URI Global: 34459 Iteration Time: 59

APace received: After LRI Global: 35359 Iteration Time: 779

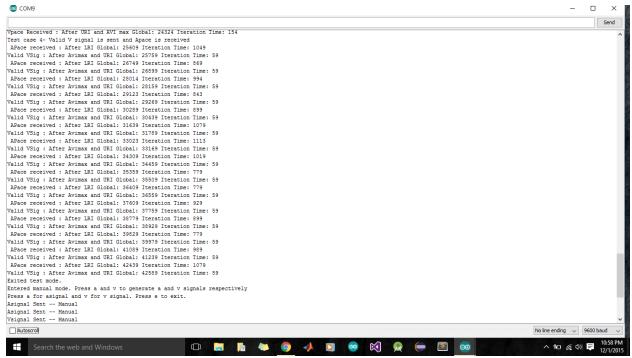
Valid VSig: After Avimax and URI Global: 35509 Iteration Time: 59

APace received: After LRI Global: 36409 Iteration Time: 779

Valid VSig: After Avimax and URI Global: 36559 Iteration Time: 59

APace received: After LRI Global: 37609 Iteration Time: 929

Valid VSig: After Avimax and URI Global: 37759 Iteration Time: 59 APace received: After LRI Global: 38779 Iteration Time: 899 Valid VSig: After Avimax and URI Global: 38929 Iteration Time: 59 APace received: After LRI Global: 39829 Iteration Time: 779 Valid VSig: After Avimax and URI Global: 39979 Iteration Time: 59 APace received: After LRI Global: 41089 Iteration Time: 989 Valid VSig: After Avimax and URI Global: 41239 Iteration Time: 59 APace received: After LRI Global: 42439 Iteration Time: 1079 Valid VSig: After Avimax and URI Global: 42589 Iteration Time: 59 Exited test mode.



# Test Case 4:

Test case 4- Valid V signal is sent and Apace is received

APace received: After LRI Global: 45439 Iteration Time: 899

Valid VSig: After Avimax and URI Global: 45589 Iteration Time: 59

APace received: After LRI Global: 46731 Iteration Time: 1021

Valid VSig: After Avimax and URI Global: 46879 Iteration Time: 59

APace received: After LRI Global: 47779 Iteration Time: 779

Valid VSig: After Avimax and URI Global: 47929 Iteration Time: 59

APace received: After LRI Global: 48859 Iteration Time: 809

Valid VSig: After Avimax and URI Global: 49009 Iteration Time: 59

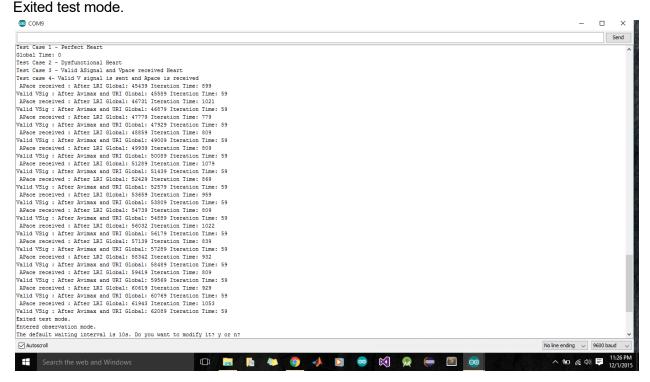
APace received: After LRI Global: 49939 Iteration Time: 809

Valid VSig: After Avimax and URI Global: 50089 Iteration Time: 59

APace received: After LRI Global: 51289 Iteration Time: 1079

Valid VSig: After Avimax and URI Global: 51439 Iteration Time: 59

APace received: After LRI Global: 52429 Iteration Time: 869 Valid VSig: After Avimax and URI Global: 52579 Iteration Time: 59 APace received: After LRI Global: 53659 Iteration Time: 959 Valid VSig: After Avimax and URI Global: 53809 Iteration Time: 59 APace received: After LRI Global: 54739 Iteration Time: 809 Valid VSig: After Avimax and URI Global: 54889 Iteration Time: 59 APace received: After LRI Global: 56032 Iteration Time: 1022 Valid VSig: After Avimax and URI Global: 56179 Iteration Time: 59 APace received: After LRI Global: 57139 Iteration Time: 839 Valid VSig: After Avimax and URI Global: 57289 Iteration Time: 59 APace received: After LRI Global: 58342 Iteration Time: 932 Valid VSig: After Avimax and URI Global: 58489 Iteration Time: 59 APace received: After LRI Global: 59419 Iteration Time: 809 Valid VSig: After Avimax and URI Global: 59569 Iteration Time: 59 APace received: After LRI Global: 60619 Iteration Time: 929 Valid VSig: After Avimax and URI Global: 60769 Iteration Time: 59 APace received: After LRI Global: 61943 Iteration Time: 1053 Valid VSig: After Avimax and URI Global: 62089 Iteration Time: 59



#### Pacemaker:

Observation Interval Trace and Modes:

Press n or N for normal mode

Press m or M for manual mode

Press s or S for sleep mode

Press e or E for exercise mode

Press o or O for exercise mode

Pacemaker-Asignal Received! Global Time: 631

Pacemaker-VPace Sent! Global Time: 1139

Pacemaker-Asignal Received! Global Time: 1501

Pacemaker-Vsignal Received! Global Time: 2418

Pacemaker-Apace Sent! Global Time: 3602

Pacemaker-VPace Sent! Global Time: 3735

Pacemaker-Apace Sent! Global Time: 4859

Pacemaker-VPace Sent! Global Time: 4994

Pacemaker-Asignal Received! Global Time: 5808

Pacemaker-VPace Sent! Global Time: 6209

Pacemaker-Asignal Received! Global Time: 6841

Pacemaker-VPace Sent! Global Time: 7364

Pacemaker-Asignal Received! Global Time: 8189

Pacemaker-VPace Sent! Global Time: 8744

Pacemaker-Asignal Received! Global Time: 9272

Pacemaker-VPace Sent! Global Time: 9824

Pacemaker-Apace Sent! Global Time: 11101

Pacemaker-VPace Sent! Global Time: 11234

Pacemaker-Asignal Received! Global Time: 11914

Pacemaker-VPace Sent! Global Time: 12359

Pacemaker-Asignal Received! Global Time: 12960

Pacemaker-VPace Sent! Global Time: 13499

Pacemaker-Asignal Received! Global Time: 14342

Pacemaker-VPace Sent! Global Time: 14639

Pacemaker-Asignal Received! Global Time: 15153

Pacemaker-Asignal Received! Global Time: 15239

Pacemaker-Asignal Received! Global Time: 15330

Pacemaker-VPace Sent! Global Time: 15959

Pacemaker-Asignal Received! Global Time: 16709

Pacemaker-VPace Sent! Global Time: 17024

Pacemaker-Asignal Received! Global Time: 17689

Mode switching to Exercise Mode

Pacemaker-VPace Sent! Global Time: 17882

Pacemaker-Apace Sent! Global Time: 18409

Pacemaker-VPace Sent! Global Time: 18542

Pacemaker-Apace Sent! Global Time: 18832

Pacemaker-VPace Sent! Global Time: 18977

Pacemaker-Apace Sent! Global Time : 19327

Pacemaker-VPace Sent! Global Time: 19472

Pacemaker-Apace Sent! Global Time: 19817

Pacemaker-VPace Sent! Global Time: 19952

Pacemaker-Apace Sent! Global Time: 20419

Pacemaker-VPace Sent! Global Time: 20552

Pacemaker-Apace Sent! Global Time: 20988

Pacemaker-VPace Sent! Global Time: 21122

Pacemaker-Apace Sent! Global Time: 21618

Pacemaker-VPace Sent! Global Time: 21752

Pacemaker-Apace Sent! Global Time: 22041

Pacemaker-Vsignal Received! Global Time: 22174

Pacemaker-Apace Sent! Global Time: 22728

Pacemaker-VPace Sent! Global Time: 22862

Pacemaker-Apace Sent! Global Time: 23178

Pacemaker-VPace Sent! Global Time: 23312

Pacemaker-Apace Sent! Global Time: 23692

Pacemaker-VPace Sent! Global Time: 23837

Pacemaker-Apace Sent! Global Time: 24182

Pacemaker-VPace Sent! Global Time: 24317

Pacemaker-Apace Sent! Global Time: 24753

Pacemaker-VPace Sent! Global Time: 24887

Pacemaker-Apace Sent! Global Time: 25339

Pacemaker-VPace Sent! Global Time: 25472

Pacemaker-Apace Sent! Global Time: 25834

Pacemaker-VPace Sent! Global Time: 25967

The default waiting interval is 10s. Do you want to modify it? y or n?

Pacemaker-Apace Sent! Global Time: 26436

Pacemaker-VPace Sent! Global Time: 26582

Pacemaker-Apace Sent! Global Time: 26943

Pacemaker-VPace Sent! Global Time: 27077

Default rate set to 10.

Pacemaker-Apace Sent! Global Time: 27453

Pacemaker-VPace Sent! Global Time: 27587

Pacemaker-Apace Sent! Global Time: 28098

Pacemaker-VPace Sent! Global Time: 28232

Pacemaker-Apace Sent! Global Time: 28578

Pacemaker-VPace Sent! Global Time: 28712

Pacemaker-Apace Sent! Global Time: 29088

Pacemaker-VPace Sent! Global Time : 29222

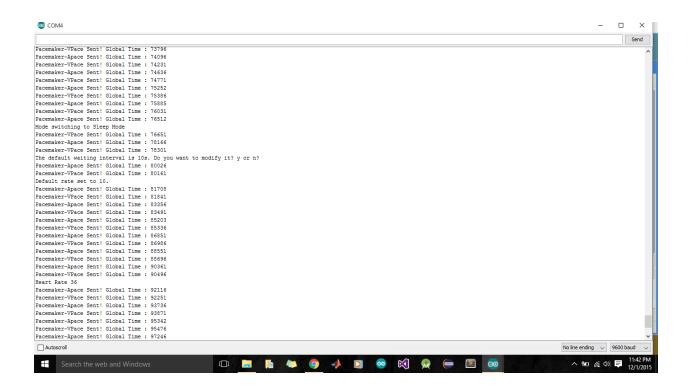
Pacemaker-Apace Sent! Global Time: 29612

Pacemaker-VPace Sent! Global Time: 29747

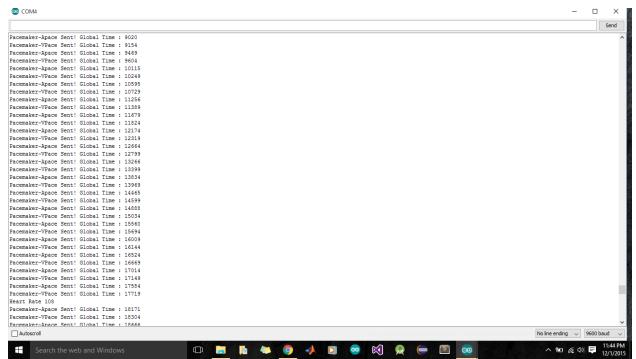
Pacemaker-Apace Sent! Global Time: 30138

Pacemaker-VPace Sent! Global Time: 30272 Pacemaker-Apace Sent! Global Time: 30632 Pacemaker-VPace Sent! Global Time: 30767 Pacemaker-Apace Sent! Global Time: 31053 Pacemaker-Vsignal Received! Global Time: 31161 Pacemaker-Apace Sent! Global Time: 31488 Pacemaker-VPace Sent! Global Time: 31622 Pacemaker-Apace Sent! Global Time: 32013 Pacemaker-VPace Sent! Global Time: 32147 Pacemaker-Apace Sent! Global Time: 32688 Pacemaker-VPace Sent! Global Time: 32822 Pacemaker-Apace Sent! Global Time: 33157 Pacemaker-VPace Sent! Global Time: 33302 Pacemaker-Apace Sent! Global Time: 33588 Pacemaker-VPace Sent! Global Time: 33722 Pacemaker-Apace Sent! Global Time: 34039 Pacemaker-VPace Sent! Global Time: 34172 Pacemaker-Apace Sent! Global Time: 34683 Pacemaker-VPace Sent! Global Time: 34817 Pacemaker-Apace Sent! Global Time: 35329 Pacemaker-VPace Sent! Global Time: 35462 Pacemaker-Apace Sent! Global Time: 35992 Pacemaker-VPace Sent! Global Time: 36137 Pacemaker-Apace Sent! Global Time: 36437 Pacemaker-VPace Sent! Global Time: 36572 Pacemaker-Apace Sent! Global Time: 36935 Pacemaker-VPace Sent! Global Time: 37082 Heart Rate 114

Rate for Sleep mode when heart is manual:



## Rate for Exercise Mode when heart is manual:



Note: These will be closer to their lower bounds since pacing is happening