Hyperperiod:
Hyperperiod=LCM(PI)
PI={50,50,100,20,10,100}
LCM(50,50,100,20,10,100)=100

CPU Load:

U=R/H
Where R is the summation of work done, and H is the hyperperiod

E1 (execution time of button_1_Monitor): 14.5 us
E2 (execution time of button_2_Monitor): 14.5 us
E3 (execution time of periodic_transmitter): 14.5 us
E4 (execution time of uart_receiver): 15 us
E5 (execution time of Load_1_simulation): 5 ms (5000 us)
E6 (execution time of Load_2_simulation): 12ms (12000 us)
U=(2*14.5 +2*14.5 +15*1 + 5*15 + 10*5000 + 1*12000)/(100*10^3)
U=0.62

System schedulability:
sigma(Ci/pi)<=n(2^1/n-1)

14.5*10^-3/50 + 14.5*10^-3/50 + 15*10^-3/100 +15*10^-3/20 + 5/10 + 12/100=0.62
6(2^⅙ -1)=0.735
Since the condition holds, therefore the system is schedulable

Using Time demand analysis:
The tasks priority in rate monotonic would be as follows:
E5, E4, E1, E2, E3, E6

E5:
W(10)=5+0=5 <10 so E5 is schedulable

E4:
w(20)= 15*10^-3 + (20/10)*5=10<20 so E4 is schedulable

E1:
w(50)= 14.5*10^-3 + (50/20)*15*10^-3 + (50/10)*5=25<50 so E1 is schedulable

E2:
w(50)= 14.5*10^-3 + (50/50)*14.5*10^-3 +.(50/20)*15*10^-3 + (50/10)*5=25<50 so E2 is schedulable

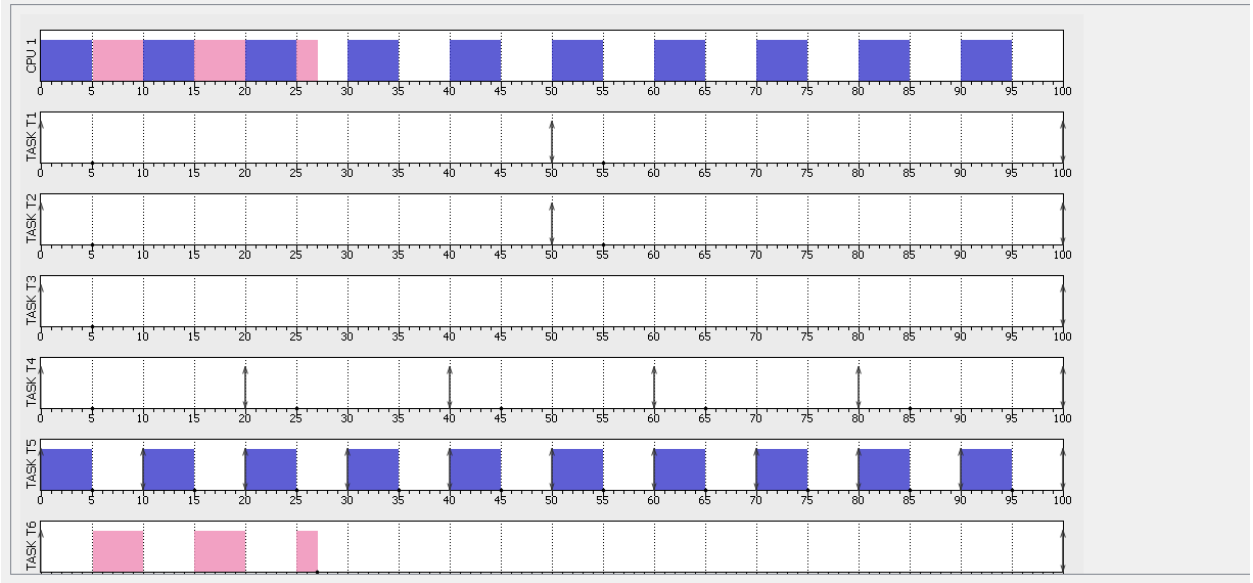
E3:
w(100)= 14.5*10^-3 + (100/50)*14.5*10^-3 + (100/50)*14.5*10^-3 +
(100/20)*15*10^-3+(100/10)*5=50<100 so E3 is schedulable

E6:
w(100)= 12 + (100/100)*14.5*10^-3 + (100/50)*14.5*10^-3 + (100/50)*14.5*10^-3 +
(100/20)*15*10^-3+(100/10)*5=62<100 so E6 is schedulable

SIMSO:

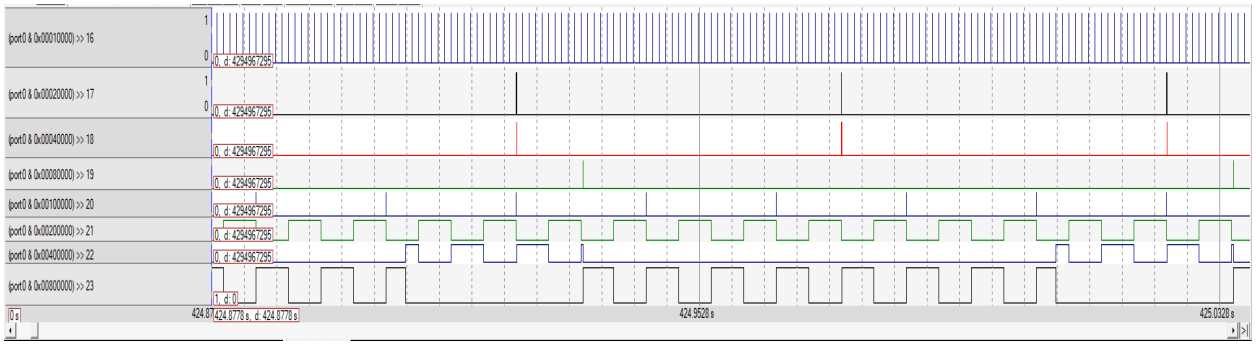
General | Scheduler | Processors | Tasks

id	Name	Task type	Abort on miss	Act. Date (ms)	Period (ms)	List of Act. dates (ms)	Deadline (ms)	WCET (ms)	Followed by
1	TASK T1	Periodic	No	0	50.0	-	50.0	0.00135	2
2	TASK T2	Periodic	No	0	50.0	-	50.0	0.00135	2
3	TASK T3	Periodic	No	0	100.0	-	100.0	0.0008	1
4	TASK T4	Periodic	No	0	20.0	-	20.0	0.00153	3
5	TASK T5	Periodic	No	0	10	-	10	5.0	4
6	TASK T6	Periodic	No	0	100.0	-	100.0	12.0	1



Plot of tasks using trace macros, GPIO, and Logic analyzer:

Tick on pin 0 port0
Task 1 on pin 1 port0
Task 2 on pin 0 port0
Task 3 on pin 0 port0
Task 4 on pin 0 port0
Task 5 on pin 0 port0
Task 6 on pin 0 port0



CPU load using trace macros, and Timer 1:

task_1_total	0x000029C2	int
task_2_total	0x00002A57	int
task_3_total	0x000016C2	int
task_4_total	0x00006C9F	int
task_5_total	0x01048F88	int
task_6_total	0x003E81B4	int
system_time	33862337	int
cpu_load	62	int
<Enter expression>		