EDF SCHEDULER

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Hyperperiod

Task	Periodicity
Button 1 Monitor	50
Button 2 Monitor	50
Periodic Transmitter	100
UART Transmitter	20
Load 1 Simulation	10
Load 2 Simulation	100

Hyperperiod = 100ms

CPU Load

Using SIMSO

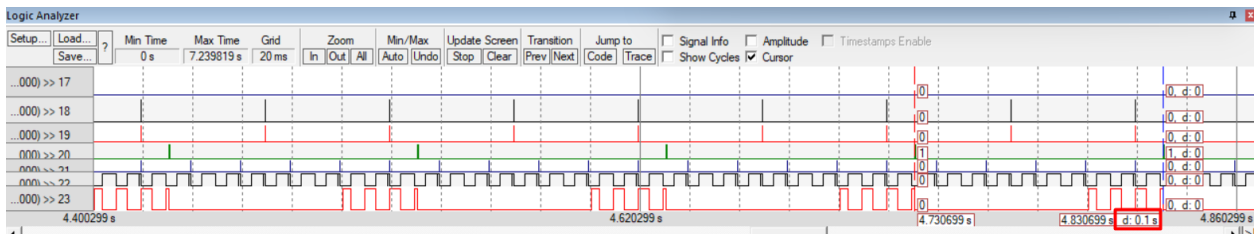## Using Utilization Calculation

U= Time Executing/Period

U = (0.0134/50) + (0.0136/50) + (0.01295/100) + (0.01367/20) + (5.019/10) + (12.04/100) **= 62.37%**

Keil Simulator

Task 1 and 2:
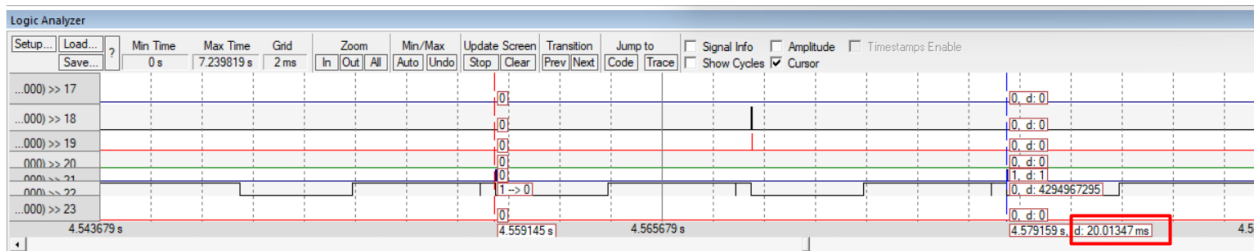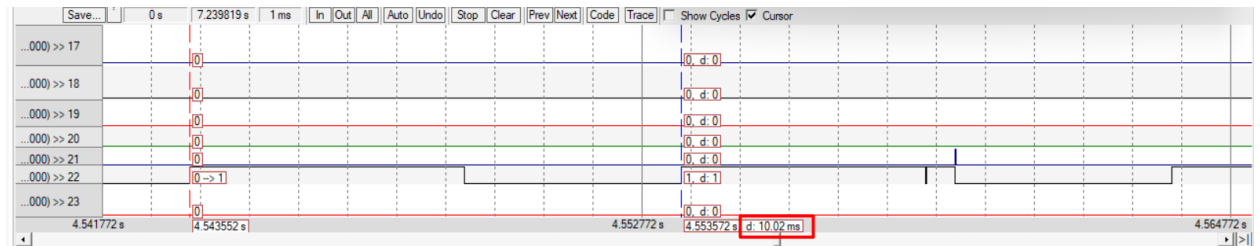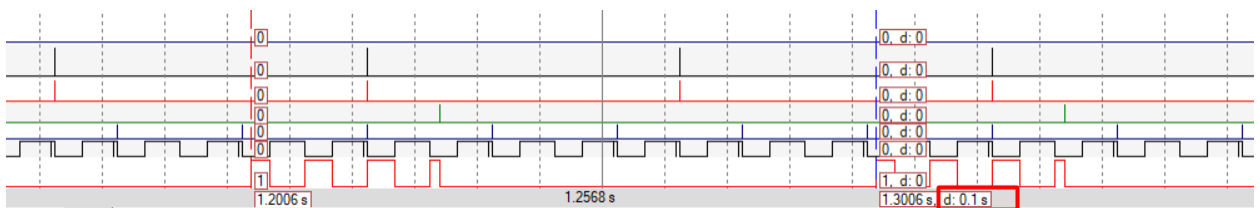

Task 3:

Task 4:

Task 5:

Task 6:

System Schedulability

Using URM

Number of tasks = 6

U = 0.6237

URM = 3 * (2 ^ (1/3) - 1) = 0.7798

Since U < URM, then system **is Schedulable.**

Using Time Demand Analysis

$$w_i(t) = e_i + \sum_{k=1}^{i-1} \left\lceil \frac{t}{p_k} \right\rceil e_k \quad for\ 0 < t \le p_i$$

W = Worst response time
E = Execution time
P = Periodicity
T = Time instance

Task 5

E= 5ms

P= 10ms

t=10ms

w5(10) = 5 < 10

Schedulable

Task 4

E= 100us

P= 20ms

t=20ms

w4(20) = 10.03 < 20

Schedulable

Task 1

E= 25us

P= 50ms

t=50ms

w1(50) = 25.059 < 50

Schedulable

Task 2

E= 25us

P= 50ms

t=50ms

w2(50) = 25.087 < 50

Schedulable

Task 3

E= 90 us

P= 100ms

t=100ms

w3(100) = 50.359 < 100

Schedulable

Task 6

E= 12ms

P= 100ms

t= 100ms

w6(100) =62.452 < 100

Schedulable

System Is Schedulable

SIMSO Simulator