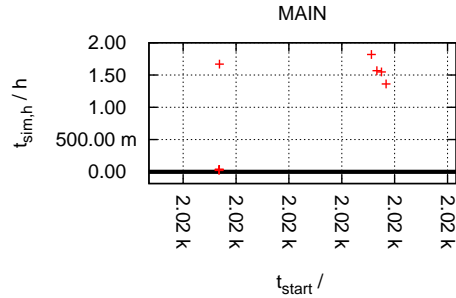


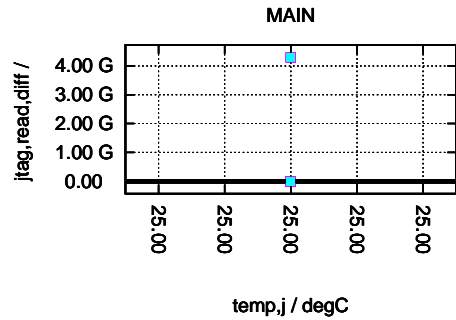
1 Verification Report TOP test trim

Simulation time



1.1 JTAG Read Register Content

Calculate jtag_rdata - jtag_wdata



1.2 Task powerup

Set voltage source vvotp_vbg to 1.2 V (t=1e-6 s)

Set voltage source vvotp_vpp to 8.3 V (t=1e-6 s)

Set voltage source vvotp_vref to 0.175 V (t=1e-6 s)

Set voltage source vvotp_vrr to 2.98 V (t=1e-6 s)

Set supply source vvsup to vvsup V (t=10e-6 s)

Set supply source vvio to vvio V (t=10e-6 s)

wait 5e-3

Set voltage source vtmode to 0 V (t=1e-6 s)

Set voltage source vdab to 0 V (t=1e-6 s)

Set voltage source vbfbw to 0 V (t=1e-6 s)

Set voltage source vsyncb to 0 V (t=1e-6 s)

wait 10e-6

Set voltage source vtmode to vvio V (t=1e-6 s)

```
wait 10e-6
TM TRIM_IC_INIT
wait 1e-3
```

1.3 Task sup_ib

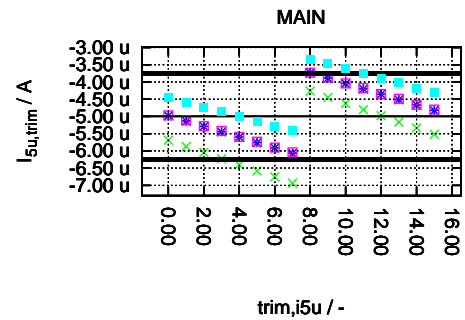
Write test_supply.ATB_SUP_I5U via jtag1

TM TRIM_IREF trim_i5u

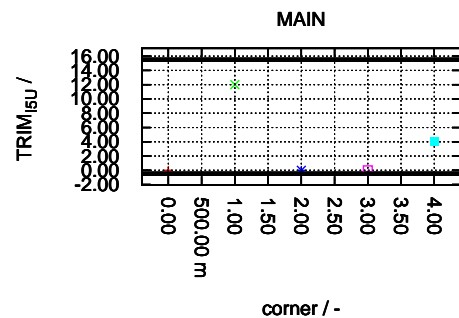
Set voltage source vaout to 2.5 V (t=1e-6 s)

wait 100e-6

Measure xdut.xana.xsup.xmux.amux current via ATB I(xdut.aout_p) *1+0



TM TRIM_IREF trim_i5u_best
Calculate trim_i5u_best



Write test_top.ATB_reset via jtag1

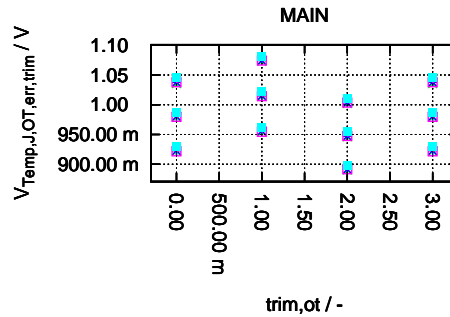
1.4 Task sup_ot

Write test_supply.TM_OT_ERR via jtag1

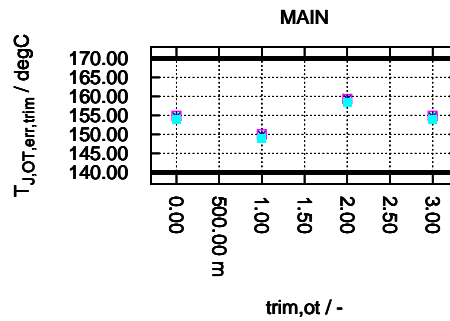
Write test_supply.ATB_OT_COMP via jtag1

TM TRIM_OT trim_ot

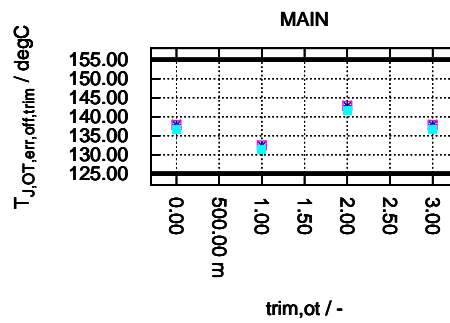
Measure comparator threshold xdut.xana.xtmon.v_tsens_i to gnd at rfc_pcb
(2 V ... 0.5 V, t 10e-3 s) * 1



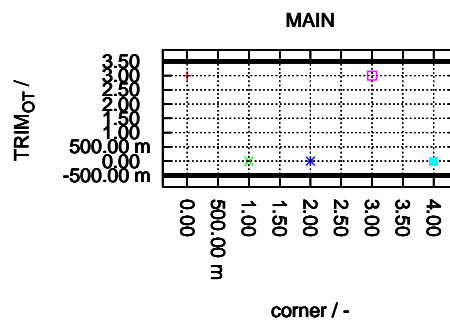
Calculate $125 - (V_Temp_J_OT_err_trim_vfall - 1.125) / 6.8e-3$



Calculate $125 - (V_Temp_J_OT_err_trim_vrise - 1.125) / 6.8e-3$



Calculate $trim_ot_best$



Write $test_top.ATB.reset$ via jtag1

Write $test_supply.TM_OT.reset$ via jtag1

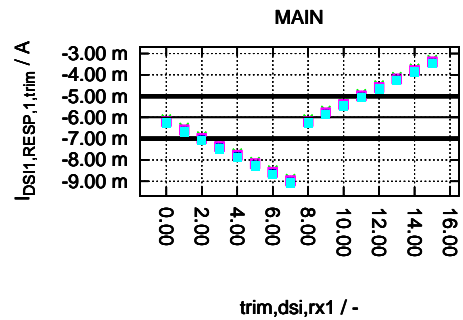
1.5 Task dsi_rec_th

Write test_dsi.TM_DSI_RX1 via jtag1

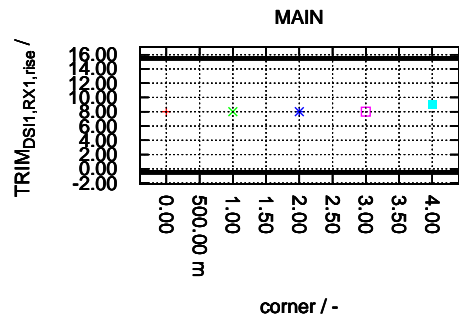
TM TRIM_DSI_REC_RISE 1 trim_dsi_rx1 0

TM TRIM_DSI_REC_FALL 1 trim_dsi_rx1 0

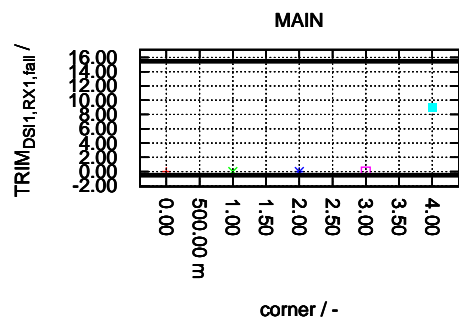
Measure comparator threshold xdut.dsi1_p at mosi_pcb (2e-3 A ... 10e-3 A, t 10e-3 s) * 1



Calculate trim_dsi_rx1_rise_best



Calculate trim_dsi_rx1_fall_best



Write test_dsi.TM_DSI_reset via jtag1

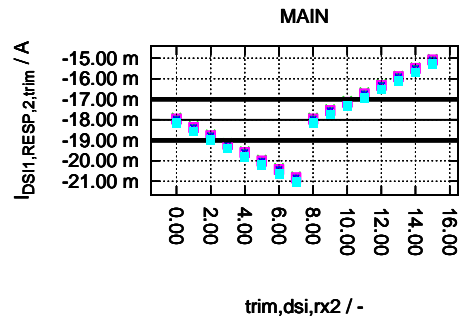
Write test_dsi.TM_DSI_RX2 via jtag1

TM TRIM_DSI_REC_RISE 1 0 trim_dsi_rx2

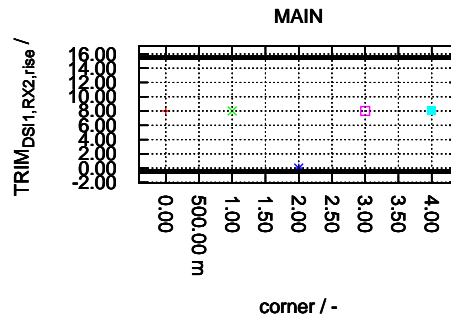
TM TRIM_DSI_REC_FALL 1 0 trim_dsi_rx2

Measure comparator threshold xdut.dsi1_p at mosi_pcb (14e-3 A ... 22e-3 A, t 10e-3 s) * 1

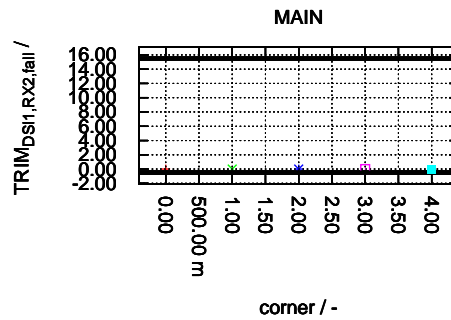
A, t 10e-3 s) * 1



Calculate trim_dsi_rx2_rise_best



Calculate trim_dsi_rx2_fall_best



Write test_dsi.TM_DSI_reset via jtag1

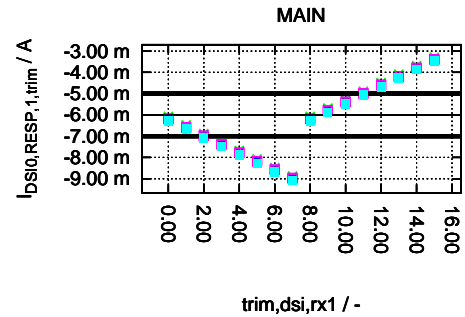
Set current source idsi1 to 0 A (t=1e-6 s)

Write test_dsi.TM_DSI_RX1 via jtag1

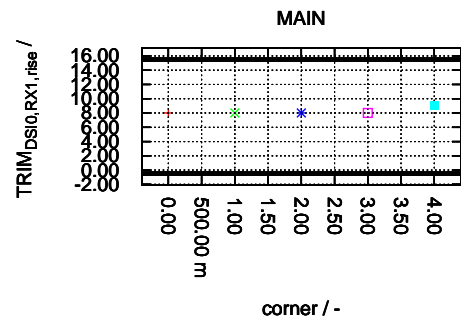
TM TRIM_DSI_REC_RISE 0 trim_dsi_rx1 0

TM TRIM_DSI_REC_FALL 0 trim_dsi_rx1 0

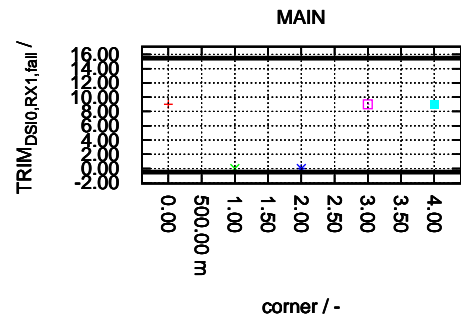
Measure comparator threshold xdut.dsi0_p at csb_pcb (2e-3 A ... 10e-3 A, t 10e-3 s) * 1



Calculate trim_dsi_rx1_rise_best



Calculate trim_dsi_rx1_fall_best



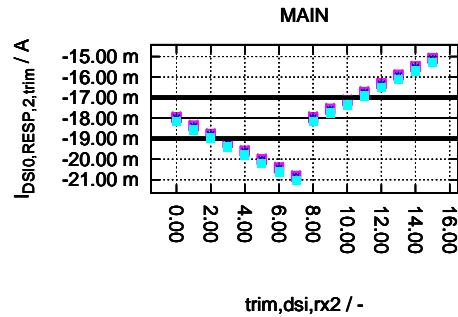
Write test_dsi.TM_DSI_reset via jtag1

Write test_dsi.TM_DSI_RX2 via jtag1

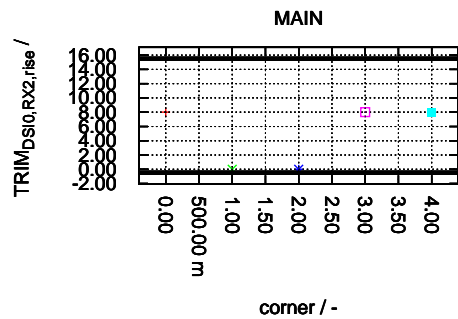
TM TRIM_DSI_REC_RISE 0 0 trim_dsi_rx2

TM TRIM_DSI_REC_FALL 0 0 trim_dsi_rx2

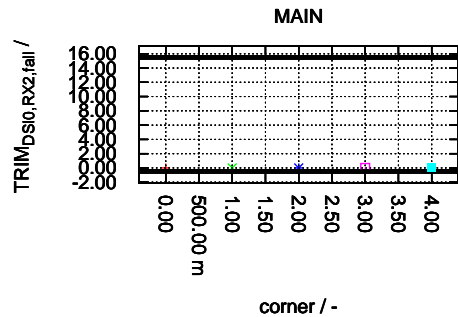
Measure comparator threshold xdut.dsi0_p at csb_pcb (14e-3 A ... 22e-3 A, t 10e-3 s) * 1



Calculate trim_dsi_rx2_rise_best



Calculate trim_dsi_rx2_fall_best

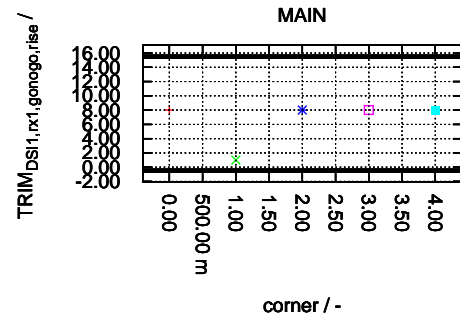


Write test_dsi.TM_DSI_reset via jtag1
Set current source idsi0 to 0 A (t=1e-6 s)

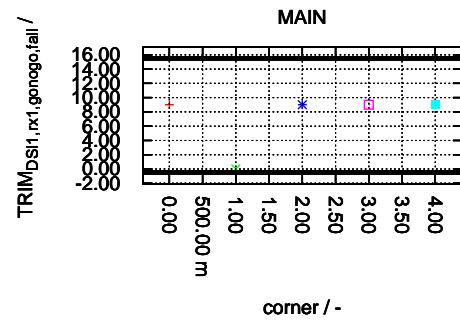
1.6 Task dsi_rec_th_optimized

Write test_dsi.TM_DSIRX1 via jtag1
Set current source idsi1 to -1e-3*-6.0 A (t=1e-6 s)
wait 1e-3
TM TRIM_DSI_REC_RISE 1 trim_dsi_rx1 0
TM TRIM_DSI_REC_FALL 1 15 0
wait 100e-6

Calculate trim_dsi_rx1_rise_best



Calculate trim_dsi_rx1_fall_best



Write test_dsi.TM_DSI_reset via jtag1

Write test_dsi.TM_DSI_RX2 via jtag1

Set current source ids1 to $-1e-3 \cdot 18.0$ A ($t=1e-6$ s)

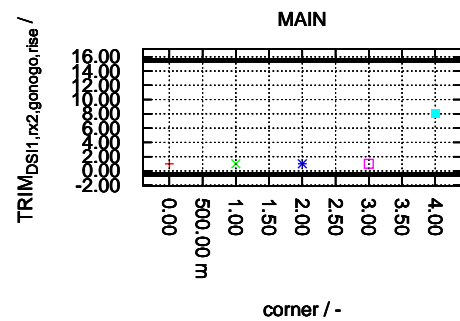
wait 1e-3

TM TRIM_DSI_REC_RISE 1 trim_dsi_rx1_rise_best trim_dsi_rx2

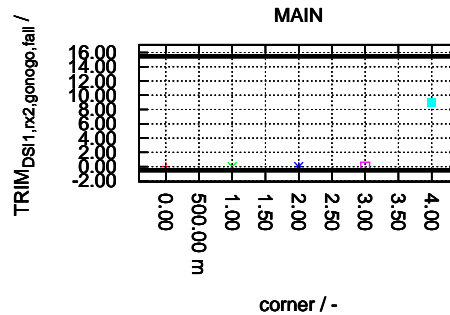
TM TRIM_DSI_REC_FALL 1 trim_dsi_rx1_fall_best 15

wait 100e-6

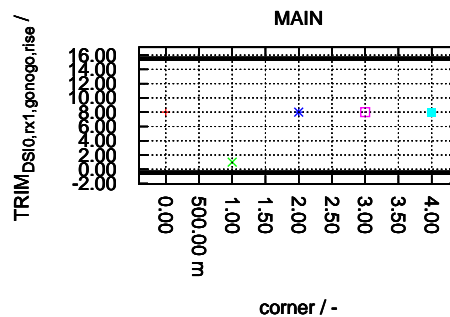
Calculate trim_dsi_rx2_rise_best



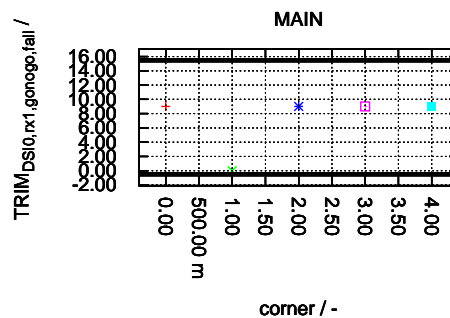
Calculate trim_dsi_rx2_fall_best



```
Write test_dsi.TM_DSI_reset via jtag1
Set current source idsi1 to 0 A (t=1e-6 s)
Write test_dsi.TM_DSI_RX1 via jtag1
Set current source idsi0 to -1e-3*-6.0 A (t=1e-6 s)
wait 1e-3
TM TRIM_DSI_REC_RISE 0 trim_dsi_rx1 0
TM TRIM_DSI_REC_FALL 0 15 0
wait 100e-6
Calculate trim_dsi_rx1_rise_best
```

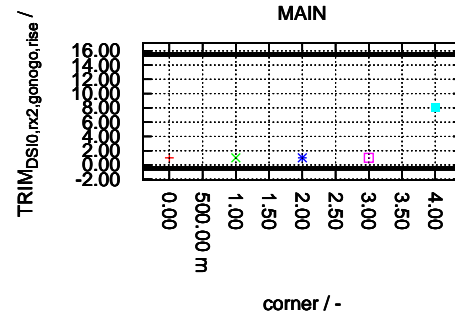


```
Calculate trim_dsi_rx1_fall_best
```

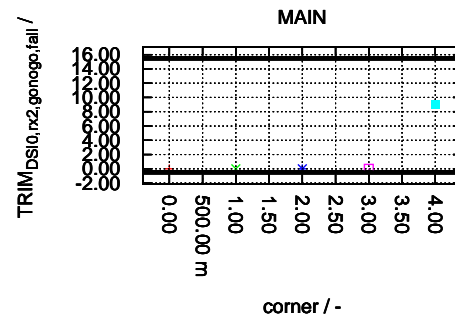


```
Write test_dsi.TM_DSI_reset via jtag1
Write test_dsi.TM_DSI_RX2 via jtag1
Set current source idsi0 to -1e-3*-18.0 A (t=1e-6 s)
wait 1e-3
```

```
TM TRIM_DSI_REC_RISE 0 trim_dsi_rx1_rise_best trim_dsi_rx2
TM TRIM_DSI_REC_FALL 0 trim_dsi_rx1_fall_best 15
wait 100e-6
Calculate trim_dsi_rx2_rise_best
```



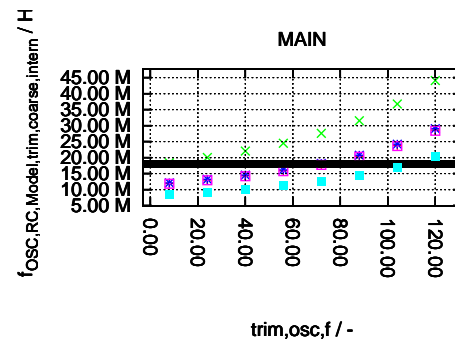
```
Calculate trim_dsi_rx2_fall_best
```



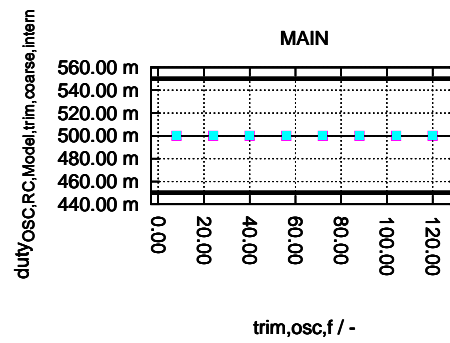
```
Write test_dsi.TM_DSI_reset via jtag1
Set current source idsi0 to 0 A (t=1e-6 s)
```

1.7 Task timebase_osc

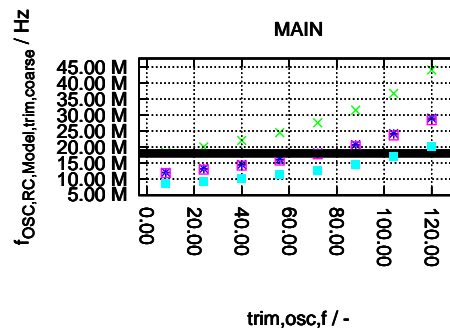
```
Write test_osc.TM_CLK_OSC_DIV via jtag1
TM TRIM_OSC trim_osc_f
Calculate clkosc_freq
```



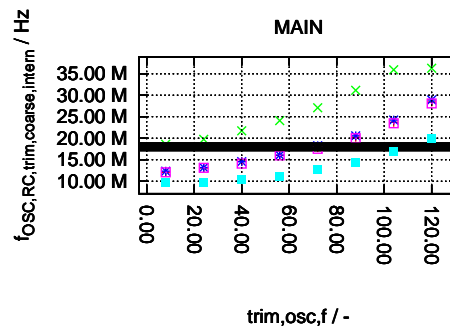
Calculate clkosc_duty



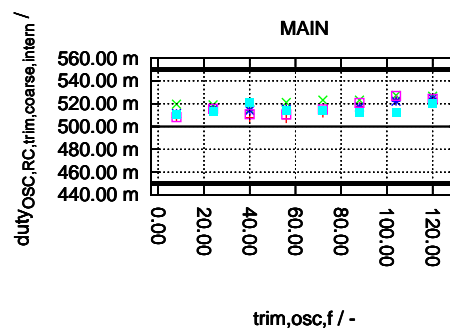
Calculate rfc_freq * 36



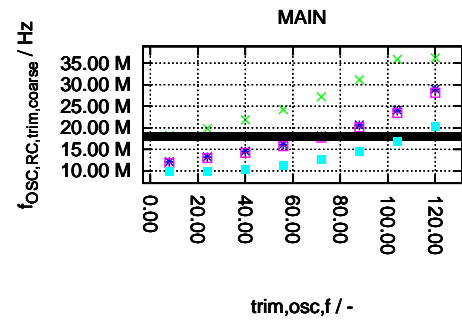
Calculate clkosc_freq



Calculate clkosc_duty

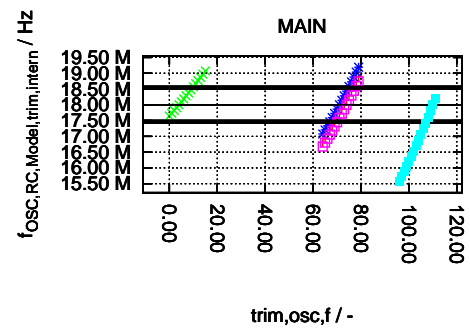


Calculate rfc_freq * 36

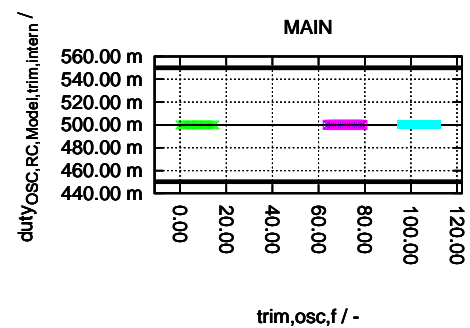


TM TRIM_OSC trim_osc_f

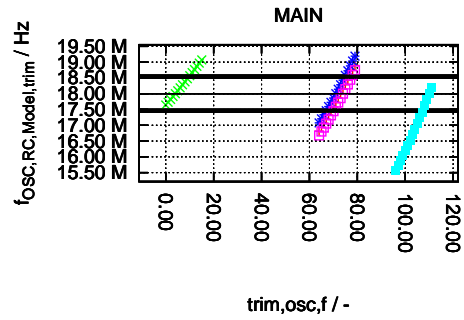
Calculate clkosc_freq



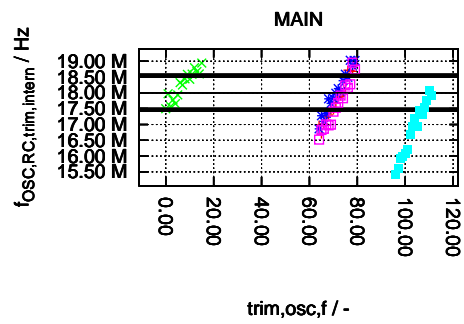
Calculate clkosc_duty



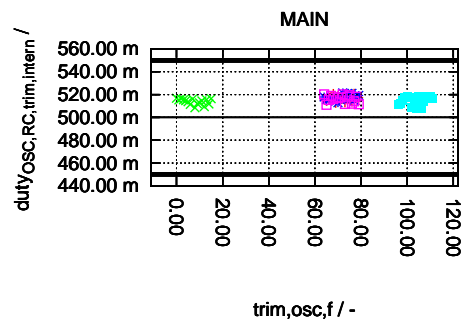
Calculate rfc_freq * 36



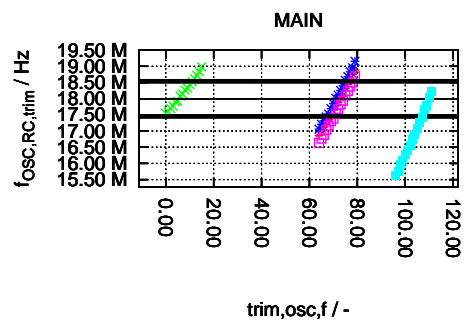
Calculate $clkosc_freq$



Calculate $clkosc_duty$

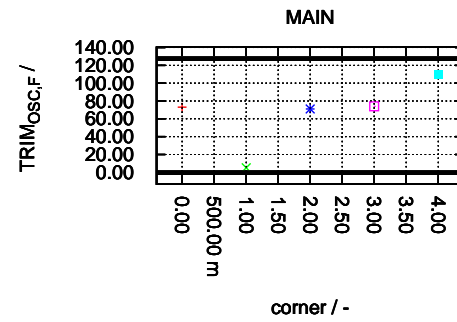


Calculate $rfc_freq * 36$



TM TRIM_osc $trim_osc_f_best$

Calculate trim_osc_f_best



Write test_osc.TM_CLK_reset via jtag1