

EXAMPLE – ANALOG INPUT

The screenshot displays the THRSim11 software interface. The main window shows the assembly code being executed. The registers window shows the current state of the registers. The Sliders Report window shows the current input values for the analog input. The Analog window shows the current state of the analog input. The Commands window shows the current command being executed.

Registers Window:

A	\$ba
B	\$55
D	\$ba55
X	\$1000
Y	\$0000
SP	\$00ff
PC	\$b623
CC	%11010010

Sliders Report Window:

3642	1676	0	0	0	0	0	0
PE0	PE1	PE2	PE3	PE4	PE5	PE6	PE7

Assembly Code Window:

```

BSET OPTION,X %11000000
LDY #30 ;
LENGAH DEY ;
BNE LENGAH ;
LDAA #%00110000 ;
STAA ADCTL,X ;
TUNGGU LDAA ADCTL,X ;
BPL TUNGGU ;
LDAA AD1,X ;
LDAB AD2,X ;
CBA ;
BHI ABESAR ;
STAB $50 ;
BBESAR STAB $10 ;
STAA $50 ;
BRA TAMAT ;
ABESAR STAB $10 ;
TAMAT BRA TUNGGU ;
END
    
```

2. Click RUN to test overall program, then click STOP. Click STEP to test line by line execution and monitor the result on ACCA and ACCB. Change the sliders position to change input value and conform on ACCA and ACCB again. Check the flow of program (green line) when PE0>PE1, PE0=PE1 and PE0<PE1. Check memory address \$50 and \$10 for final result

1. Modify instruction LDAA #%00010000 to LDAA #%00110000.

EXAMPLE – PARALLEL INPUT/OUTPUT

The screenshot shows the THRSim11 interface with several windows:

- Registers:** A window showing register values: A: \$01, B: \$04, D: \$0104, X: \$69ad, Y: \$0184, SP: \$00ff, PC: \$b60d, CC: %11010000.
- Assembly Code:** A window showing assembly instructions. The instruction `LDAA PORTD` is circled in red. Below it, `REP LDAA PORTD` and `STAA PORTC` are also circled in red.
- Memory:** A window showing memory contents. The address `$b60d` is circled in red, corresponding to the `LDAA PORTD` instruction.
- PARALLEL Window:** A window showing the assembly code for the parallel I/O example, with `REP LDAA PORTD` circled in red.

2. Click RUN to test overall program, then click STOP. Click STEP to test line by line execution and monitor the result on ACCA and ACCB. Display SWITCH and connect to PD0 and LED to PC0. Toggle SWITCH continue STEP button and monitor result on LED, ACCA and Memory content of PORTD, PORTC, DDRC and DDRD.

1. Modify instruction LDAA PORTD to REP LDAA PORTD and add instruction BRA REP after STAA PORTC

