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ST-REALIZER
Introduction

• Software developed by ACTUM Solutions for ST micros (ST6 and ST7) from their REALIZER product
• ST-REALIZER is a graphical oriented tool
• The application is described as a schematic using symbols
• Symbols are coming from libraries
• From the schematic, ST-REALIZER generates the executable code that will be programmed into the chip.
ST-REALIZER
Introduction (2)

• DESIGN CYCLE

Schematic Editor

<project>.SCH

Analyser + Code generator

<project>.HEX

Simulator
ST-REALIZER
Basic concepts

EXAMPLE SCHEMATIC

Pseudo code:

AandB = A & B
AandBorC = AandB + C
Go = AandBorC
BandC = B & C
Fault = Timer (BandC, 15)
ST-REALIZER
Basic concepts

- CONNECTING I/Os
# ST-REALIZER

## Basic concepts

- **REAL CODE**

<table>
<thead>
<tr>
<th>Code</th>
<th>Value</th>
<th>Instructions</th>
</tr>
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<tbody>
<tr>
<td>C095</td>
<td>1581</td>
<td>\texttt{.RINPEND: bres v0n4,#{2}}</td>
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<tr>
<td>C097</td>
<td>038105</td>
<td>\texttt{btjf v0n7,#{1},ELOC4}</td>
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<td>C09A</td>
<td>018102</td>
<td>\texttt{btjf v0n6,#{0},ELOC4}</td>
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<td>C09D</td>
<td>1481</td>
<td>\texttt{bset v0n4,#{2}}</td>
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<td>C09F</td>
<td>058110</td>
<td>\texttt{btjf v0n4,#{2},SLOC5}</td>
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<td>C0A2</td>
<td>06810A</td>
<td>\texttt{btjt pv0n4,#{3},ChkLOC5}</td>
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<td>C0A5</td>
<td>A6DB</td>
<td>\texttt{ld A,#{low {1499}}}</td>
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<tr>
<td>C0A7</td>
<td>B783</td>
<td>\texttt{ld {T00006+1},A}</td>
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<td>C0A9</td>
<td>A605</td>
<td>\texttt{ld A,#{low {{1499} shr 8}}}</td>
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<td>\texttt{ld T00006,A}</td>
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<td>C0D5</td>
<td>1F81</td>
<td>\texttt{bres v0n2,#{7}}</td>
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ST-REALIZER
Basic concepts

• STRUCTURE OF THE CODE

- Reset entry point
- Initialization
- Read Inputs
- Process Scheme
- Write Outputs
- Update timer datastructures
- Return from Interrupt
- TIMER-IRQ
ST-REALIZER
Basic concepts

• SIMULATION
ST-REALIZER

• ADDITIONNAL FEATURES
  ➢ Hierarchical design : subschemes
  ➢ User-defined symbols

• RESULT
  ➢ Clear design structure
  ➢ Top down approach
  ➢ Re-use of existing part
  ➢ Flexibility
  ➢ No assembly to write
ST-REALIZER

Advantages

• COMFORTABLE USER INTERFACE
• SELF DOCUMENTED DESIGN
• SHORT DESIGN CYCLE
  ➢ Concept, design, development, test
• COMPLETE ERROR-FREE CODE
• DEVICE INDEPENDENT
  ➢ Type, family, vendor
• POWERFUL INTERACTIVE & FUNCTIONAL SIMULATION
• NO NEED TO LEARN ASSEMBLY
• NO NEED TO LEARN HOW THE MICRO IS WORKING
ST-REALIZER II
New features

• IMPROVED USER INTERFACE
• SUPPORT FOR INTERRUPTS
• SUPPORT FOR WAIT AND STOP MODE
• LOW LEVEL PERIPHERALS
• NEW SYMBOLS
• CONDITIONAL EXECUTION FOR SUBSCHEMES
• PIN LEVEL SIMULATION
ST-REALIZER II
Low level peripherals

Enable

Baudrate 1200

Initial value for Parity/Data Bit 9
Enable when using the 9th data bit as a second stop bit
ST-REALIZER II
Pin level simulation
REALIZER PRODUCTS

• ACTUM PRODUCTS
  ➢ Gold
  ➢ Silver
  ➢ Bronze
  One target module, extendable with others
  Available from ACTUM : www.actum.com

• ST-REALIZER II
  ➢ ST6 and ST7 Target micros
  ➢ Comparable to Silver
  Available from ST