**EECS 363: Digital Filtering**

**Lab 4 - 2/12/2017**

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**Code:**

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/\* LNKX.CMD - COMMAND FILE FOR LINKING C PROGRAMS IN LARGE/HUGE MEMORY MODEL \*/

/\* \*/

/\* Usage: \*/

/\* cl55 <src files> -z -o<out file> -m<map file> lnkx.cmd -l<RTS library> \*/

/\* \*/

/\* Description: This file is a sample command file that can be used for \*/

/\* linking programs built with the C Compiler. Use it as a \*/

/\* guideline; you may want to change the allocation scheme \*/

/\* according to the size of your program and the memory layout \*/

/\* of your target system. \*/

/\* \*/

/\* Notes: (1) You must specify the directory in which <RTS library> is \*/

/\* located. Either add a "-i<directory>" line to this file \*/

/\* file, or use the system environment variable C55X\_C\_DIR to \*/

/\* specify a search path for the libraries. \*/

/\* \*/

/\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

-stack 0x2000 /\* Primary stack size \*/

-sysstack 0x1000 /\* Secondary stack size \*/

-heap 0x2000 /\* Heap area size \*/

-c /\* Use C linking conventions: auto-init vars at runtime \*/

-u \_Reset /\* Force load of reset interrupt handler \*/

/\* SPECIFY THE SYSTEM MEMORY MAP \*/

**MEMORY**

{

**PAGE** **0:** /\* ---- Unified Program/Data Address Space ---- \*/

MMR (RWIX): origin = 0x000000, length = 0x0000c0 /\* MMRs \*/

DARAM0 (RWIX): origin = 0x0000c0, length = 0x00ff40 /\* 64KB - MMRs \*/

SARAM0 (RWIX): origin = 0x010000, length = 0x010000 /\* 64KB \*/

SARAM1 (RWIX): origin = 0x020000, length = 0x020000 /\* 128KB \*/

SARAM2 (RWIX): origin = 0x040000, length = 0x00FE00 /\* 64KB \*/

VECS (RWIX): origin = 0x04FE00, length = 0x000200 /\* 512B \*/

PDROM (RIX): origin = 0xff8000, length = 0x008000 /\* 32KB \*/

**PAGE** **2:** /\* -------- 64K-word I/O Address Space -------- \*/

IOPORT (RWI) : origin = 0x000000, length = 0x020000

}

/\* SPECIFY THE SECTIONS ALLOCATION INTO MEMORY \*/

**SECTIONS**

{

**.text** >> SARAM1|SARAM2|SARAM0 /\* Code \*/

/\* Both stacks must be on same physical memory page \*/

**.stack** > DARAM0 /\* Primary system stack \*/

.sysstack > DARAM0 /\* Secondary system stack \*/

**.data** >> DARAM0|SARAM0|SARAM1 /\* Initialized vars \*/

**.bss** >> DARAM0|SARAM0|SARAM1 /\* Global & static vars \*/

**.const** >> DARAM0|SARAM0|SARAM1 /\* Constant data \*/

**.sysmem** > DARAM0|SARAM0|SARAM1 /\* Dynamic memory (malloc) \*/

.switch > SARAM2 /\* Switch statement tables \*/

**.cinit** > SARAM2 /\* Auto-initialization tables \*/

**.pinit** > SARAM2 /\* Initialization fn tables \*/

**.cio** > SARAM2 /\* C I/O buffers \*/

.args > SARAM2 /\* Arguments to main() \*/

.coeffs >> DARAM0

.dbuffer >> DARAM0

vectors > VECS /\* Interrupt vectors \*/

.ioport > IOPORT **PAGE** 2 /\* Global & static ioport vars \*/

}

**Output (In Q15 format):**

4096

8192

12288

16384

16384

16384

16384

16384

16384

16384

16384

16384

16384

16384

16384

16384

12288

8192

4096

0