TP SETR (3A LE / Apprentis)

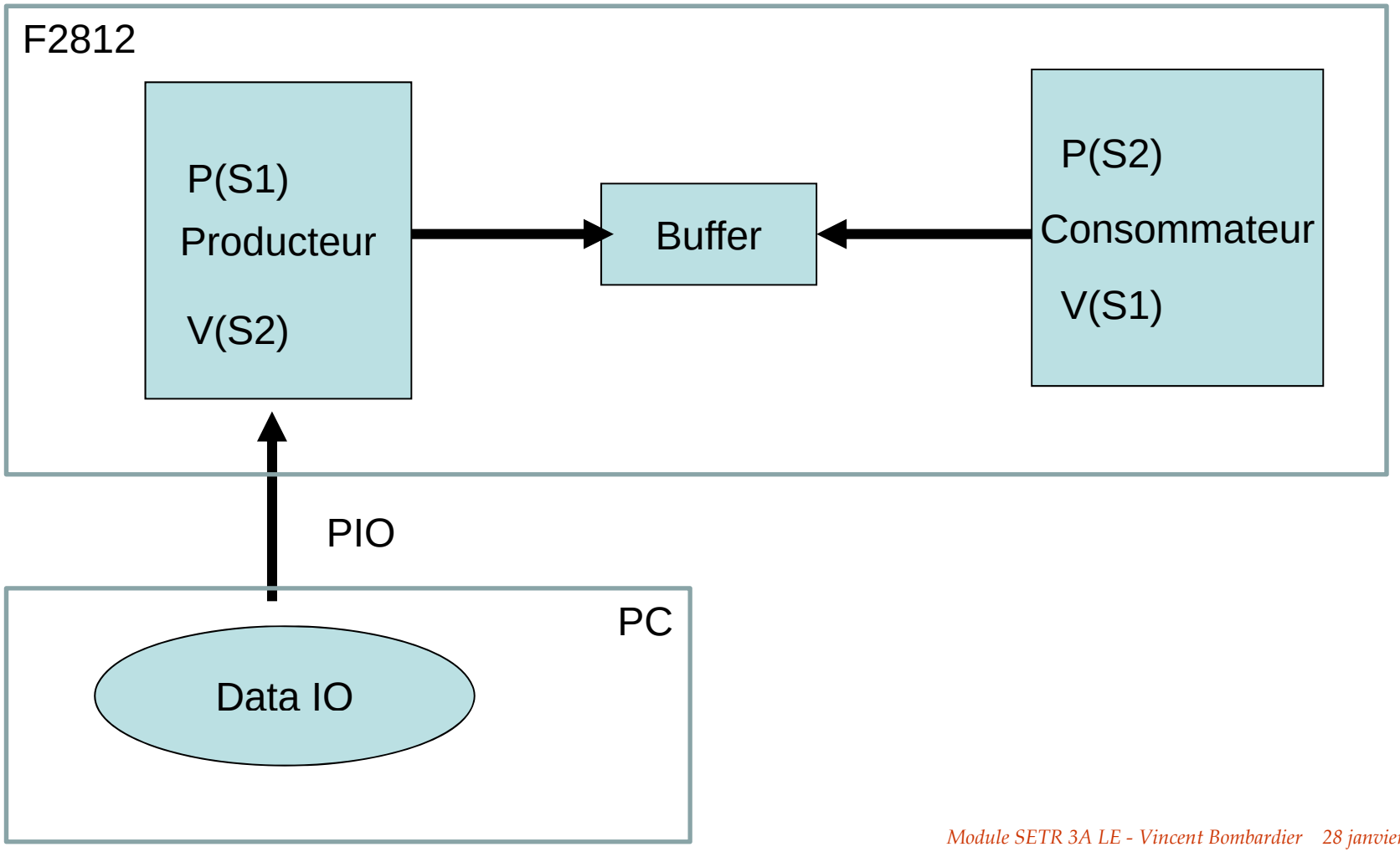
Objectifs :

- Développer un projet sur le Kit Digital Spectrum de TI:
  - Réaliser la lecture de données avec un processus et compter le nombre de données supérieures à 0 avec un autre processus.
  - Mettre en place le modèle producteur-consommateur unique.
  - Modifier le modèle pour qu'il fonctionne avec plusieurs consommateurs (un qui compte les valeurs > 0, l'autre qui compte les valeurs <0, un qui compte les valeurs nulles.
  - Ajouter un deuxième producteur.

Délivrables:

- Démonstration des différentes étapes.
- Déposer le projet sur le dossier /Calypso/SETR/Nom_Binome
- CR décrivant la structure et mode de fonctionnement choisi

Modèle Producteur Consommateurs simple:



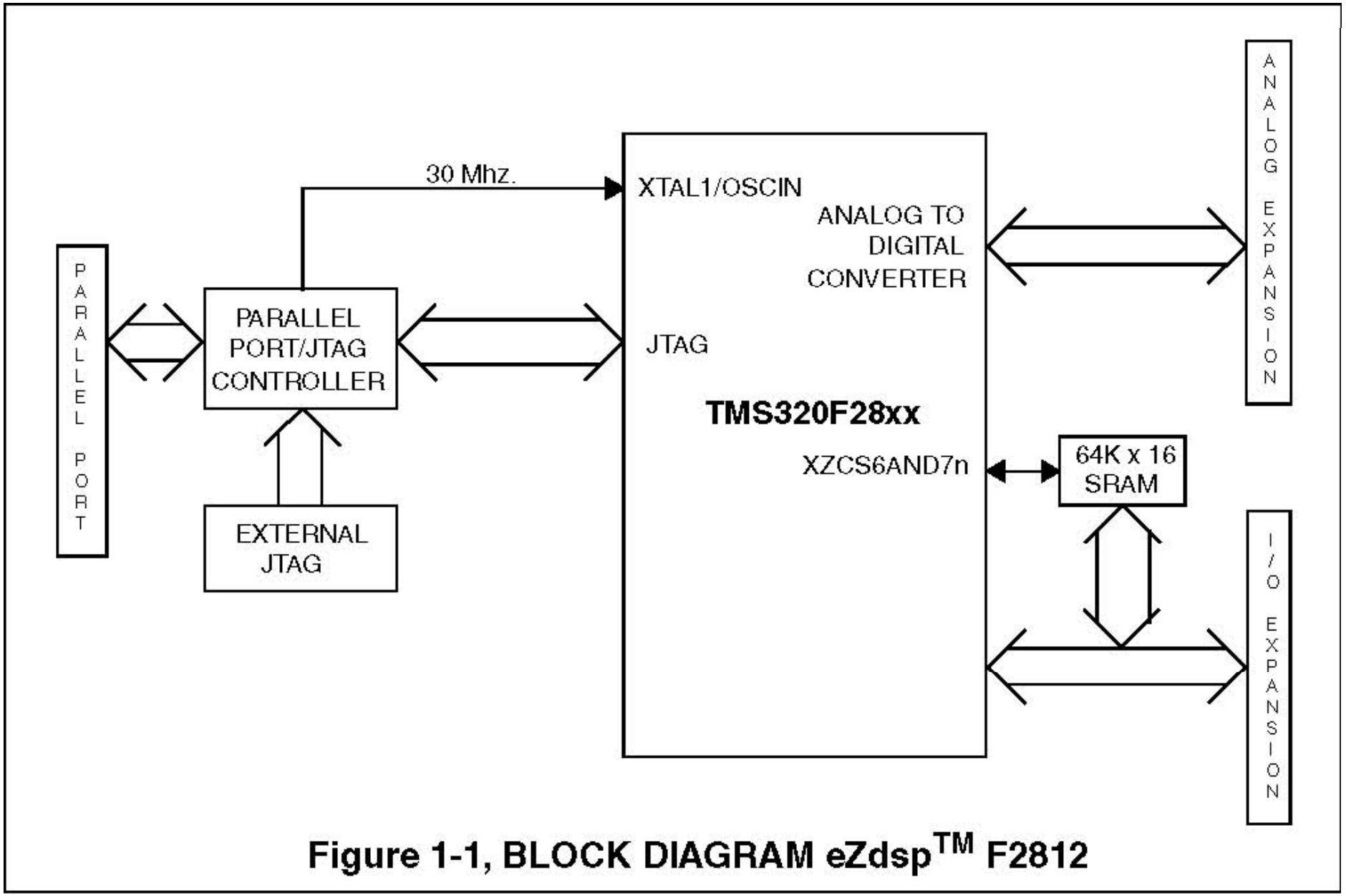


Figure 1-1, BLOCK DIAGRAM eZdsp™ F2812

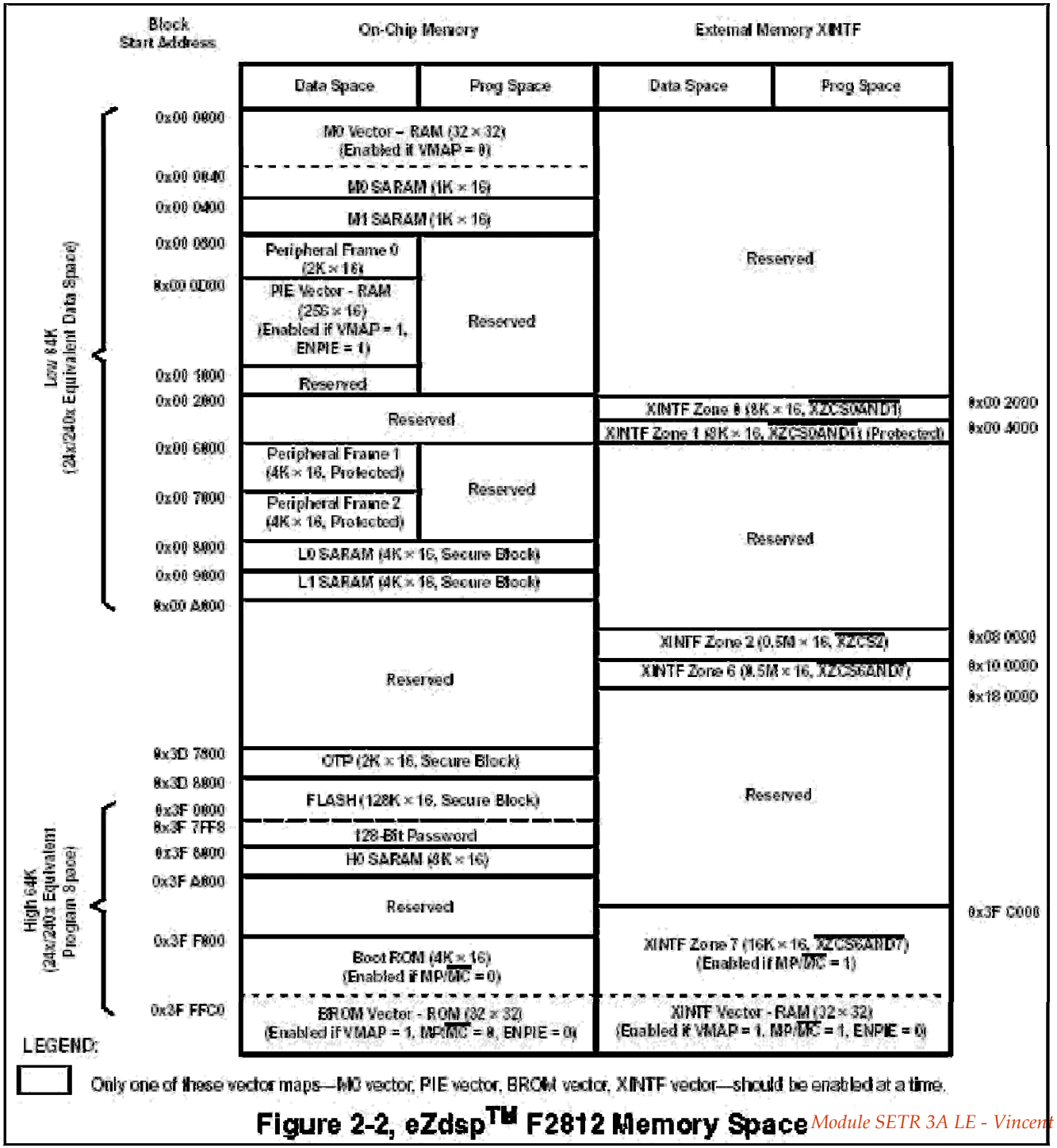
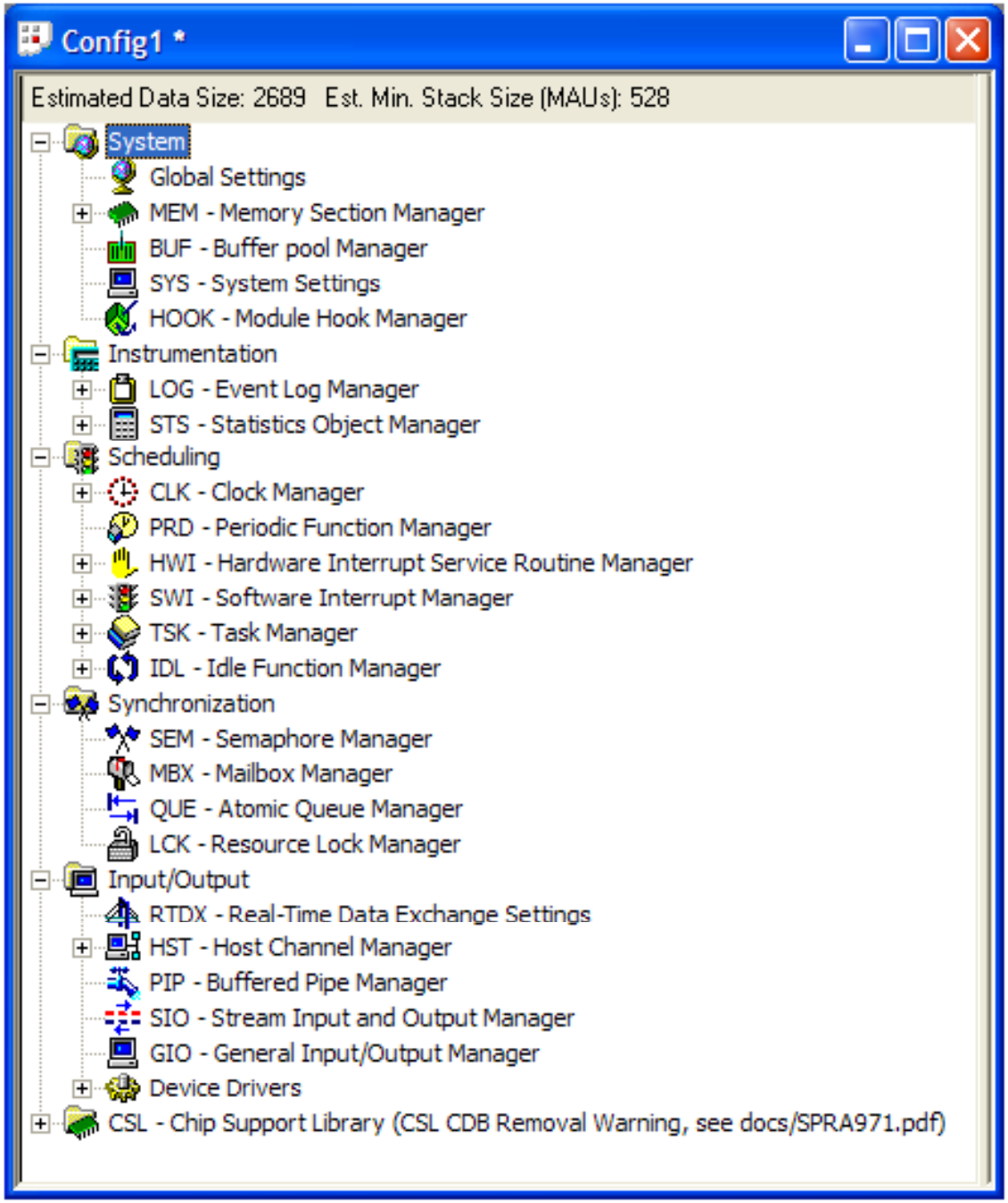


Figure 2-2, eZdsp™ F2812 Memory Space

DSP/BIOS


Config1 *
Estimated Data Size: 2689 Est. Min. Stack Size (MAUs): 528
System
Global Settings
MEM - Memory Section Manager
BUF - Buffer pool Manager
SYS - System Settings
HOOK - Module Hook Manager
Instrumentation
LOG - Event Log Manager
STS - Statistics Object Manager
Scheduling
CLK - Clock Manager
PRD - Periodic Function Manager
HWI - Hardware Interrupt Service Routine Manager
SWI - Software Interrupt Manager
TSK - Task Manager
IDL - Idle Function Manager
Synchronization
SEM - Semaphore Manager
MBX - Mailbox Manager
QUE - Atomic Queue Manager
LCK - Resource Lock Manager
Input/Output
RTDX - Real-Time Data Exchange Settings
HST - Host Channel Manager
PIP - Buffered Pipe Manager
SIO - Stream Input and Output Manager
GIO - General Input/Output Manager
Device Drivers
CSL - Chip Support Library (CSL CDB Removal Warning, see docs/SPRA971.pdf)

	HWI	SWI	TSK	IDL
Priority	highest	second highest	second lowest	lowest
Number of priority levels	DSP dependent	15 PRD function run at priority of PRD_swi SWI object. TSK scheduler runs at lowest SWI priority.	16 (including one for the idle loop)	1
Can block (suspend) own execution	no, runs to completion except for preemption	no, runs to completion except for preemption	yes	should not; would prevent PC from getting target information
Execution states	inactive, ready, running	inactive, ready, running	ready, running, blocked, terminated	ready, running
Preemption by thread type disabled by:	HWI_disable, HWI_enter (with certain masks)	SWI_disable	TSK_disable	never preempts
Posted or made ready to run by:	interrupt occurs	SWI_post, SWI_andn, SWI_dec, SWI_inc, SWI_or, PRD_tick	TSK_create	main() exits and no other thread is currently running
Stack used	system stack (1 per program)	system stack (1 per program)	task stack (1 per task)	task stack used by default
Context saved when preempted by other thread	customizable	certain registers saved to system stack	entire context saved to task stack	not applicable
Context saved when blocked	not applicable	not applicable	saves the C register set (see the compiler manual)	not applicable
Share data with thread via:	streams, queues, pipes, global variables	streams, queues, pipes, global variables	streams, queues, pipes, locks, mailboxes, global variables	streams, queues, pipes, global variables
Synchronize with thread via:	not applicable	SWI mailbox	semaphores, mailboxes	not applicable
Function hooks	no	no	yes: create, delete, exit, task switch, ready	no
Static creation	included in default configuration template	yes	yes	yes
Dynamic creation	yes	yes	yes	no
Dynamically change priority	no*	yes: SWI_raisepri, SWI_restorepri	yes: TSK_setpri	no
Implicit logging	none	post and completion events	ready, start, block, resume, and termination events	none
Implicit statistics	monitored values	execution time	execution time	none

Tutorial Example List

Section	Topic 1	Topic 2	Example
Code Composer IDE			
	Developing a Simple Program		Volume1
	Project Management		mainapplication
	Using Debug Tools		Sinewave
DSP/BIOS Tutorial			
	Getting Started		
		Creating a DSP/BIOS Program	hello1
			hello2
		Debugging Program Behavior	volume2
		Analyzing Real-Time Schedule	Volume2
	Sharing and Synchronizing Resource Access		
		Using Semaphores to Send	semtest
		Using Semaphores for Mutual	mutex