

- 1 Section: Unde
- 2 Section: Intro
- 3 Section: Devel
- 4 Section: Usin

Contexts		
Name	Type	CPU Load
ISR 83	#83	0.13 %
SysTick	#15	0.21 %
Scheduler		0.45 %
usbTask	@3	0.11 %
usbprint	@2	1.13 %
Tmr Svc	@2	0.00 %
Idle		99.62 %

- **Bugs in book**, pages 307-308

- This paragraph, from the book, has some misstatements:
  - *Decrease the maximum amount of time to wait on data to become available in the stream from an infinite timeout to 100 ticks. This minimizes context switching and how often usbTask will need to run. It also allows for more data to be transferred to the USB stack at a time:*
  - The underlined sentences are incorrect. The original time-to-wait was `portMAX_DELAY`, and it has the potential to result in larger data transfers, and less context switches for `usbTask`.
- This sentence, from the book, has some misstatements:
  - *Increasing the trigger value of the stream buffer from 1 to 500 bytes and increasing the available block time from 1 to 100 ticks reduces the CPU usage of usbTask by a whopping 94%:*
  - The underlined phrase is incorrect. The block-time was decreased from `portMAX_DELAY` to 100. The decrease would most likely increase the CPU usage of `usbTask`.
- For a trigger-value of 500 bytes, my tests indicate the CPU usage is almost identical for block-times of 100 and `portMAX_DELAY`. The test for a block-time of 100 is shown above. The test for a block-time of `portMAX_DELAY` is shown below.
  - My test, using this modified code:

```
txStream = xStreamBufferCreate( txBuffLen, 500);
uint8_t numBytes = xStreamBufferReceive(txStream, usbTxBuff, txBuffLen,
portMAX_DELAY);
```

Contexts		
Name	Type	CPU Load
ISR 83	#83	0.13 %
SysTick	#15	0.21 %
Scheduler		0.44 %
usbTask	@3	0.11 %
usbprint	@2	1.10 %
Tmr Svc	@2	0.00 %
Idle		99.62 %

## 4 Section: Using mutexes for access control (pg 308)

- **Clarification**, page 309

- This paragraph was confusing to me:
  - *To prevent multiple copies of this mutex from being created for each compilation unit VirtualComDriverMultiTask is included in, we won't define our private global variables as having static scope this time. Since we don't have namespaces in C, we'll prepend the names with `vcom_` in an attempt to avoid naming collisions with other globals.*
- The paragraph is describing `VirtualCommDriverMultiTask.c`, and its private global variables. The paragraph says those variables are defined in a way that is amenable for use in multiple compilation units. Apparently, those variables are:

```
uint8_t vcom_usbTxBuff[txBuffLen];
StreamBufferHandle_t vcom_rxStream = NULL;
StreamBufferHandle_t vcom_txStream = NULL;
TaskHandle_t vcom_usbTaskHandle = NULL;
SemaphoreHandle_t vcom_mutexPtr = NULL;
```

- In the paragraph, a contrast is made with `VirtualCommDriver.c`. That file's private global variables are defined as static. Apparently, those variables are:

```
static uint8_t usbTxBuff[txBuffLen];
static StreamBufferHandle_t txStream = NULL;
static TaskHandle_t usbTaskHandle = NULL;
```