

Freescal MQX RTOS Example Guide

KLOG example

This document explains the Klog example, what to expect from the example and a brief introduction to the API used.

The example

The example shows the usage of the kernel log component of RTOS MQX. The kernel log allows user's application program to record the information about the context switch as tasks being re-scheduled and interrupt happened in the application program. The kernel log API is used to enable log for specific component and to display log information to terminal.

Running the example

The user only needs to do compilation of MQX libraries, ksdk library and the example without any further step.

The MQX_USE_LOGS and MQX_KERNEL_LOGGING macros must be set to non-zero in the user_config.h file prior to compilation of MQX libraries and the example itself.

To run the example the corresponding IDE, compiler, debugger and a terminal program are needed.

Explaining the example

The application example creates only one task called main_task.

The main_task creates the kernel log component as it is optional component of RTOS MQX.

The kernel log is then activated over specific components using command _klog_control(), for example

```
_klog_control(KLOG_ENABLED | KLOG_CONTEXT_ENABLED | LOG_INTERRUPTS_ENABLED |  
KLOG_SYSTEM_CLOCK_INT_ENABLED | KLOG_FUNCTIONS_ENABLED |  
KLOG_TIME_FUNCTIONS | KLOG_INTERRUPT_FUNCTIONS, TRUE);
```

The information of function switching, interrupt occurrence, task switching are displayed over the output terminal.

An example of the output is shown in the following figure.

```
klog - HyperTerminal
File Edit View Call Transfer Help

148. 0x00000003F:031C -> INT 0xF
149. 0x000000040:08C6 -> INT 0xF END
150. 0x000000040:031C -> INT 0xF
151. 0x000000041:08C6 -> INT 0xF END
152. 0x000000041:031C -> INT 0xF
153. 0x000000042:08C6 -> INT 0xF END
154. 0x000000042:031C -> INT 0xF
155. 0x000000043:08C6 -> INT 0xF END
156. 0x000000043:031C -> INT 0xF
157. 0x000000044:08C6 -> INT 0xF END
158. 0x000000044:031C -> INT 0xF
159. 0x000000045:08C6 -> INT 0xF END
160. 0x000000045:031C -> INT 0xF
161. 0x000000046:08C6 -> INT 0xF END
162. 0x000000046:031C -> INT 0xF
163. 0x000000047:08C6 -> INT 0xF END
164. 0x000000047:031C -> INT 0xF
165. 0x000000048:08C6 -> INT 0xF END
166. 0x000000048:031C -> INT 0xF
167. 0x000000049:08C6 -> INT 0xF END
168. 0x000000049:031C -> INT 0xF
169. 0x00000004A:08C6 -> INT 0xF END
170. 0x00000004A:031C -> INT 0xF

Connected 0:00:23 Auto detect 115200 8-N-1 SCROLL CAPS NUM Capture Print echo
```