

# **Freescale MQX RTOS Example Guide**

## **MFS\_USB example**

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

### **The example**

The example illustrates the usage of USB host, MFS and Shell API to deal with the USB memory stick. The application example allows user to perform a set of commands with USB memory stick through the terminal output. This including creating and deleting files, writing to and read reading from files as well as manipulation of directory.

### **Running the example**

User needs to build usbh library and mfs library in addition to building basic MQX libraries - bsp and psp.

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

### **Explaining the example**

- o Initialize the USB module (full speed or high speed module depends on the setting of macro `BSP_USB_TWR_SER2` in the file `twr-xxx.h`) of the MCU. This includes the IO configuration relating to clock configuration of USB module, installing the interrupt handler `_usb_khci_isr()` (in the USB API), creating one more task specific for ehci or khci interface of USB module, and enabling the USB module to run in host mode.
- o Call `_usb_host_driver_info_register()`, `_usb_host_register_service()` functions to assign the information related to the host driver including the protocol type, USB class type, the event handler called `usb_host_mass_device_event()` into a structure of device's information. The event handler is used in the process of signaling task about status of USB memory stick in the system when it is removed or inserted.
- o This task then enters an endless loop where it is blocked and waits for any event related to USB inserting (insertion and change of USB interface) and removing.
  - In case of insertion of the USB memory stick the new USB interface is installed via function `_usb_hostdev_select_interface()`
  - If new USB interface is detected, function `usb_msd_install()` is invoked to display the characteristic of the USB device and to install partition manager and MFS file system handler over the USB memory.
  - When USB memory is removed, the partition handler and MFS handler are uninstalled before memory allocated for storing USB data is released.