Freescale MQX RTOS Example Guide

Ramdisk example

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

The example

The application example code is used to demonstrate how to communicate with MQX File System (MFS) on external RAM.
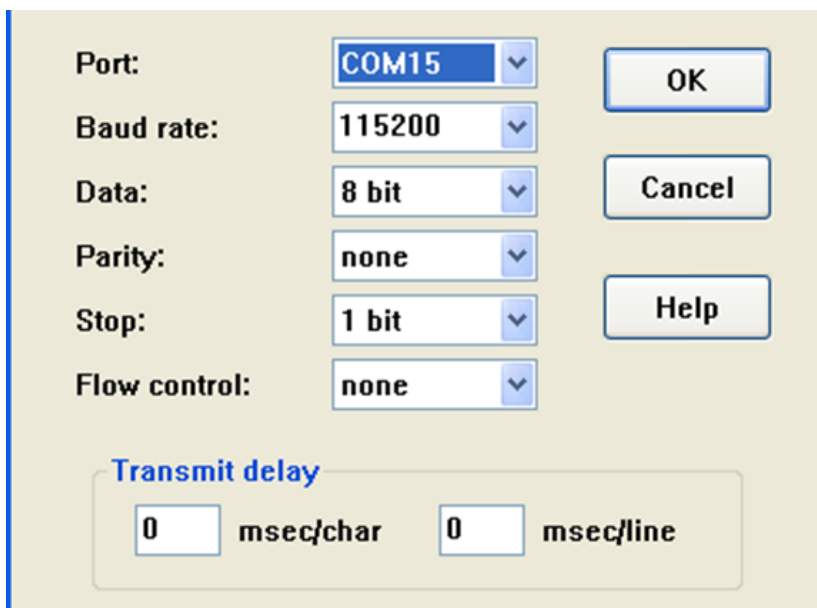
The example code opens RAM disk device and installs MFS. It allows user to perform some basic operation with the RAM disk through the terminal interface for example write/copy/create/rename. It shows how to work with the driver and how to use shell commands.

Running example

Check that the SHELLCFG_USES_MFS macro is set to 1 in the <MQX installation folder>/config/<board>/user_config.h. Then rebuild the BSP, PSP, MFS and SHELL projects for the target platform/IDE.

If MCU has MRAM, Size of RAM disk will be MRAM size.
If MCU does not have MRAM, Size of RAM disk will be a part of SRAM's size. Size of RAM disk can be changed.

Start a terminal application on your PC and set the serial connection for 115200 baud, 8 data bits, 1 stop bit, no parity and no flow control.

The Shell function takes an array of commands and a pointer to a file as parameters. The Shell_commands array specifies a list of commands and relates each command to a function.

When a command is entered into the Shell input the corresponding function is executed.

List of shell commands

- "cd": Change the current working directory.

- "copy": Copy a file to another file.

- "create": Create a file.

- "del": Delete a file.

- "disect": Reads a sector of memory.

- "dir": List all files contain in a folder.

- "df": Prints out disk free information for current file system.

- "format": Format folder.

- "help": List all the commands.

- "mkdir": The command creates one or more new directories.

- "pwd": The command is used to output the path of the current working directory.

- "read": Read file.

- "ren": Rename a file.

- "rmdir" Removes the directory entry specified by each directory argument, provided the directory is empty.

- "type": SHELL utility to Ping a host.

Explaining the example

There is a just one task (Shell_task) that opens ram disk device, installs MFS and performs operations above the device.

The Shell_task uses Ram_disk_start(void) function to open device and install MFS on device.

Install device

```
io_mem_install("mfs_ramdisk:", (unsigned char *)RAM_DISK_BASE,
      (_file_size)RAM_DISK_SIZE);
```

Open some block of device which MFS will be installed on by passing "b" flag to fopen() function.

```
fopen("mfs_ramdisk:", "b");
```

Then the function is installed, open and format MFS file system if format is required.

After ram disk is started, Shell task will go to infinite loop and waits for command that is entered from terminal.