Freescale MQX RTOS Example Guide

vadc example

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

The example

DCU4 example can run on svf522revb_a5 board with DDR support. Since it requires big memory block to hold display buffer, IntRam version will fail in running. The example will stream video from analog input (VIDEO 1) to DCU port using video subsystem modules (AFE, VDEC and VIU). Firstly in inactive state green rectangle will show up. By connecting of the analog input, video stream from the device will be played. This demo support only PAL video modulation. That's why resolution of the video stream is 720x288.

Running the example

The BSPCFG_ENABLE_DCU4 macro 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

This example demonstrates the usage of AFE, VDEC, VIU3 and DCU4 driver to create simple video stream from analog input to Display Control Unit. The example employs only one task called main_task and it does following jobs.

- Call function *sys_init()* to initialize clock of used modules in the example.
- Open the connection to the DCU4 instance 0 peripheral module to configure the DCU4 block in software.
- Call function *setup_layer()* to set up the property of layer 0 where the width, height, vertical and horizontal coordinates as well as the encoding format and color of the layer are initialized. Display resolution is set to 800x480.
- Display the timing configuration of the DCU4 module which is associated with the resolution of the LCD panel.
- Call function *AFE_Init()* to set up AFE module to initialized state.
- Call function *AFE_ATE_ADC_3()* to set up video source VIDEO 1 and AFE_ADC_3 as input.
- Call function *GoIntoVoltageClampingMode()* to set AFE converter reference.
- Call *VDEC_Init()* to set up VDEC module.
- Find proper reference to get AFE peripheral to unlock state.
- Call function *GoIntoAlwaysOnCurrentClampingMode()* to change AFE converter reference.

- Call function *VIU_test()* to set up VIU3 module and start video conversion from analog to digital.

Example limitations

The example doesn’t support NTSC video modulation.