NANO100 FreeRTOS Demo

Example Code Introduction for 32-bit NuMicro® Family

Information

Application	FreeRTOS
BSP Version	NANO100_BSP_CMSIS_v3.03.000
Hardware	NuTiny-EVB-NANO100 V1.1

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1 Function Description

1.1 Introduction

The example code NANO100_FreeRTOS modifies BSP sample code to work under FreeRTOS, which is a real-time operating system. The sample code creates two task to execute process sample code.

1.2 Principle

The demo creates 2 tasks, task0 show “Task0” and task1 show “Task1”

1.3 Demo Result

```
Task1 running ...
Task1
Task0 running ...
Task0
Task1
Task0
Task1
Task0
Task1
Task0
Task1
Task0
Task1
Task0
```

2 Code Description

Function for Task0 to show “Task0”

```
void Task0(void *pvParameters)
{
    printf("Task0 running ...\n");

    for(;;)
    {
        printf("Task0\n");
        vTaskDelay(100);
    }
}
```

Function for Task1 to show “Task1”

```
void Task1(void *pvParameters)
{
    printf("Task1 running ...\n");

    for(;;)
    {
        printf("Task1\n");
        vTaskDelay(100);
    }
}
```

Main function for create Task0 and Task1

```
int main(void)
{
    prvSetupHardware();

    xTaskCreate(Task0, (const char *)"Task0", 100, NULL, 1, NULL);
    xTaskCreate(Task1, (const char *)"Task1", 100, NULL, 2, NULL);
    vTaskStartScheduler();

    while(1);
}
```

3 Software and Hardware Environment

Software Environment

- BSP version
  - NANO100_BSP_CMSIS_v3.03.000
- IDE version
  - Keil uVersion 5.22

Hardware Environment

- Circuit components
  - NuTiny-EVB-NANO100 V1.1

4 Directory Information

- EC_NANO100_FreeRTOS_V1.00
  - Library — Sample code header and source files
    - CMSIS — Cortex® Microcontroller Software Interface Standard (CMSIS) by Arm® Corp.
    - Device — CMSIS compliant device header file
    - StdDriver — All peripheral driver header and source files
  - SamlpeCode
    - ExampleCode — Source file of example code
  - FreeRTOSv10.0.1 — A real time operating system available for free download. Its official website is: http://www.freertos.org/

5 How to Execute Example Code

1. Browsing into sample code folder by Directory Information (section 4) and double click FreeRTOS.uvproj.
2. Enter Keil compile mode
   a. Build
   b. Download
   c. Start/Stop debug session
3. Enter debug mode
   a. Run

6 Revision History

Date	Revision	Description
Oct. 1, 2019	1.00	1. Initially issued.

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