YRDKRX62N_OS3

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YRDKRX62N Example Project Read-Me

The provided example project for which this Read-Me was made utilizes the Renesas YRDKRX62N (R5F562N8) evaluation board from the RX Family. The MCU found on this development board conforms with the RX architecture.

Project Download

Download Link	Micrium_YRDKRX62N_OS3.zip

Toolchain IDE Versions

IDE/Toolchain	Version
IAR EW for RX	2.70

Micriμm Product Versions

Product	Version
µC/CPU	1.30.02
µC/LIB	1.38.01
µC/OS-III	3.05.00

Hardware Setup

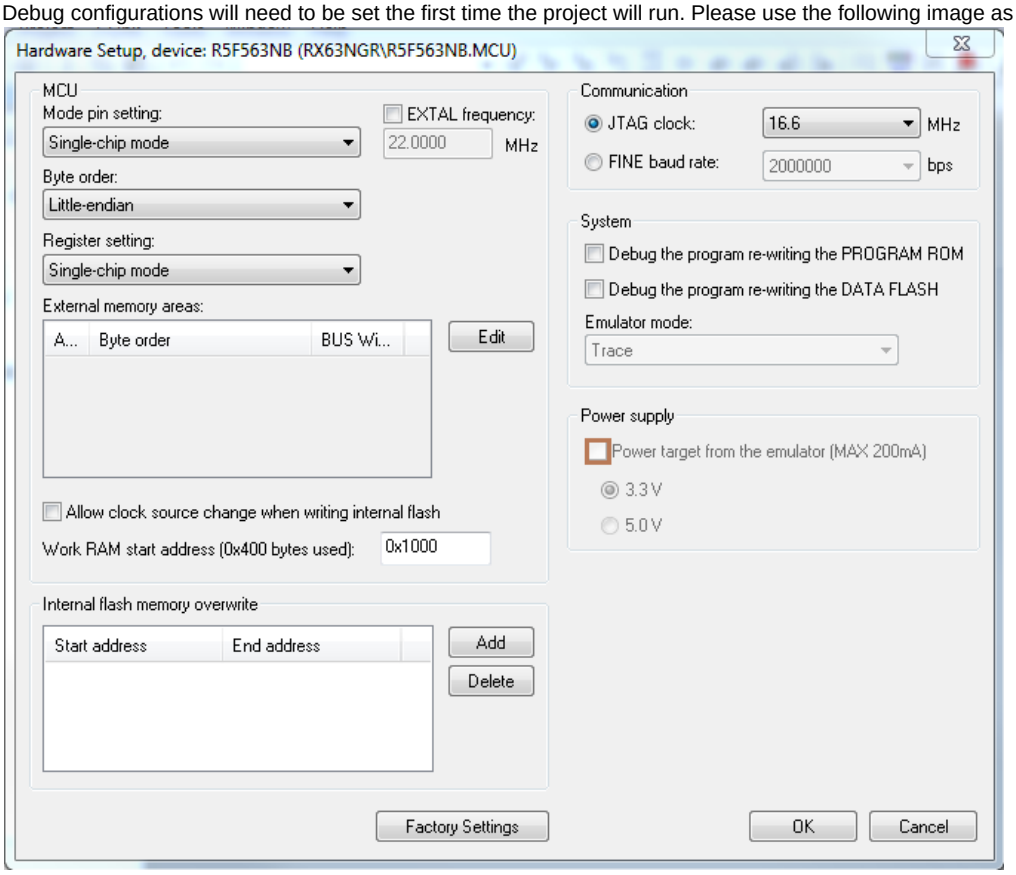
1. Have the board connected via the **J-Link** into the board debugging input (**J-Link USB**).
2. Power will be provided via J-Link's USB.

Loading & Running The Project on the Board

Make sure to open the example project workspace using the mentioned IDE(s) version or newer.

IAR Embedded Workbench for Renesas RX™

1. Click on *File–>Open–>Workspace...*
2. Navigate to the directory where the workspace is located: *$\Micrium\Examples\Renesas\YRDKRX62N\OS3\IAR\OS3.eww*
3. Click *Open*.
4. For Safety, clean the project by clicking on *Project–>Clean* (If available).
5. Compile the project by clicking on *Project–>Make*.
6. Debug configurations will need to be set the first time the project will run. Please use the following image as reference.



   a. Make sure you select the proper power supply based on your hardware setup.
7. Download the code to the board by clicking on *Project–>Download and Debug*.
8. Run the project by clicking *Debug–>Go*. To stop the project from running, click on *Debug–>Stop Debugging*.

µC/OS-III

```
void  main (void)
{
    ...
    OSInit(&os_err);                                        /* Initialize uC/OS-III
*/        (1)

 ...
    OSTaskCreate(&AppTaskStartTCB,                          /* Create the start task
*/        (2)
                 "App Task Start",
                  AppTaskStart,
                  0,
                  APP_CFG_TASK_START_PRIO,
                 &AppTaskStartStk[0],
                  APP_CFG_TASK_START_STK_SIZE / 10u,
                  APP_CFG_TASK_START_STK_SIZE,
                  0u,
                  0u,
                  0,
                 (OS_OPT_TASK_STK_CHK | OS_OPT_TASK_STK_CLR),
                 &os_err);
    OSStart(&os_err);                                       /* Start multitasking
*/        (3)
}

static  void  AppTaskStart (void *p_arg)
(4)
{
    ....


    while (DEF_TRUE) {                                      /* Task body, always as an
infinite loop.      */        (5)
     ...
(6)

        OSTimeDlyHMSM( 0u, 0u, 0u, 500u,
(7)
                       OS_OPT_TIME_HMSM_STRICT,
                      &os_err);
    }
}
```

Listing - app.c

(1)
OSInit() initializes uC/OS-III and must be called prior to calling OSStart(), which actually starts multitasking.

(2)
OSTaskCreate() creates a task to be managed by uC/OS-III. Tasks can be created either prior to the start of multitasking or by a running task. In this case, the task "AppStartTask" gets created.

(3)
OSStart() starts multitasking under uC/OS-III. This function is typically called from the startup code but after calling OSInit().

(4)
AppTaskStart is the startup task created in (2).

(5)
A task must be written as an infinite loop and must not return.

(6)

In most examples, there is hardware dependent code such as LED blink, etc.

(7)
OSTimeDlyHMSM() allows AppTaskStart to delay itself for a user-specified amount of time (500ms in this case). Rescheduling always occurs when at least one of the parameters is nonzero. Placing a break-point here can ensure that uC/OS-III is running, it should get hit periodically every 500 milliseconds.

For more information please refer to **uC/OS-III Users' Guide**.